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CLINICS.

Clinical Lectures.

ON THE TREATMENT OF CLUB-FOOT. PARTICULARLY THE CONGENITAL FORM.

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[Reported by Frank Woodbury, M.D.]

GENTLEMEN: Several cases of club-foot, which happen to be in the hospital now, afford me a good opportunity of bringing before you the subject of the treatment of this deformity; and I will therefore devote a part of my hour to the discussion of this topic, and in my remarks I will give you my reasons for expressing views which are somewhat different from those generally held.

In my experience, this deformity is met with quite as often in the female as in the male, or nearly so. Club-foot may be found at birth, or it may result in after-life from injury or paralysis of a muscle or group of muscles; thus, the affection may be congenital, or it may be acquired. Thus, of 46 cases of club-foot which came under my care this year, 21 were congenital, and 25 were acquired. It will simplify the subject under consideration if I briefly point out to you at once the varieties of club-foot and their relative frequency. There are four principal deformities known as talipes or club-foot; and as many secondary forms: thus we have Talipes Equinus, Calcaneus, Varus, and Valgus. These typical forms may be combined or associated so as to form T. Equino-Varus, Equino-Valgus, Calcaneo-Varus or -Valgus. I will illustrate these abnormal conditions upon the foot of our patient upon the table. When the heel is drawn up so that the subject walks upon the phalanges and ends of the metatarsal bones, we have the condition of *Equinus*; when the toes are elevated and the heel supports the weight of the body we have *Calcaneus*. *Varus* refers to a lateral deviation of the foot inward, the outer edge being that part upon which the patient walks; while *Valgus* denotes a contrary condition, the soles being turned outward. When the heel is drawn up and the patient also walks on the outer side of the foot, there is

represented *talipes equino-varus;* or, if on the inner border, *talipes equino-valgus;* in a similar manner *Calcaneus* may be associated with both forms of lateral deflection making *talipes calcaneo-varus* and *calcaneo-valgus.*

Morbid Anatomy.—All these deformities, considered under the generic term *talipes*, depend upon the contraction of muscles or tendons, or paralysis of antagonizing muscles. Sooner or later the bones of the foot, which are not greatly altered at birth, become much distorted and changed in their mutual relations; the astragalus often being most affected, and it may even be congenitally malformed.

Etiology.—Theories the most contradictory have been advanced in regard to the etiology of congenital club-foot. Accept which view you choose, the fact still remains that the condition is due to *an arrest of development* from some efficient cause, which invariably continues to exert its influence through life, upon the subsequent growth of the limb.

Treatment.—In the treatment of club-foot we should have in mind not only the deformity but the causes which have produced it, and for these reasons we employ manipulation, including massage, galvanism, and stretching, these alone, or combined with the section of tendons, and the application of carefully constructed mechanical appliances.

In considering the treatment of individual cases, it is well to remember that we should not use the knife if it is possible to obtain a ready cure of the deformity without it, and never in congenital club-foot until the child is able at least to walk, *i. e.*, about the end of the first year or so. Nevertheless, it must be acknowledged that we may now and then materially shorten the treatment, occasionally even in children, by the judicious division of a tendon or of the plantar fascia. Each case must be a study in itself; and the surgeon will find his best guide in the conditions attending the individual case. There are certain rules, however, in regard to congenital infantile club-foot which have been laid down by surgical authorities; these I think are so erroneous that it is to this subject that I shall especially direct your attention.

History.—Let me say a word or two in regard to the history of tenotomy. The earliest recorded case of club-foot where operation was performed, was about 1784. Delpech after this performed subcutaneous division of the tendo Achillis, but to Stromeyer of Hanover is generally awarded the credit of successfully introducing, in 1830, subcutaneous tenotomy as it is now generally performed. Since that period a number of surgeons have, from their combined influence and favourable experience, placed tenotomy among the regular operations of modern surgery.

Operation.—In performing tenotomy, we use a small, sharp, and a blunt pointed knife; the former to puncture the skin, the latter to divide the tendon; if the surgeon be a dexterous operator he can continue the operation and divide the tendon with the same instrument; but it is usual to relinquish the pointed blade, substituting the probe-end knife to complete the operation; the knife being passed under the tendon, it is divided from below upwards. Many prefer the probe-end tenotome, especially for the tendo Achillis, on account of the proximity of the posterior tibial artery and the veins. In many cases, when the division of the tendon is effected, the sound of the sudden yielding can readily be heard, and when the foot is then put into a normal position, a gap occurs, making a depression which can be seen and felt between the divided ends of the tendon: before making the section, I need hardly say that the tendon should be

placed on the greatest tension. In the course of a few days the interval of separation between the divided ends becomes filled by exudative material, which subsequently becomes organized and finally becomes converted into tendon; in fact the method of union is the same as in soft tissues or bone. At the expiration of about six weeks the union has become so intimate that if the tendon be tested it would more likely yield elsewhere than at the point of union by the adventitious tissue. This early and firm repair in the divided tendon has an important bearing upon the question of the after-treatment, as to the immediate rectification of the deformed foot; thus, shall a club-foot be allowed to remain in its original position, as some advise, for some days after the operation, before an attempt is made by gradual stretching to correct the deformity? I would lay down the rule, that, in all cases without exception immediately after tenotomy, the foot should be restored as nearly as possible to its normal position. The plastic material encompassing the cut tendon bridges the space between the two ends, in the course of a few weeks any excess of new material is absorbed and carried away just as in the provisional callus of bone, and thus the tendon is left permanently lengthened as desired. This is, therefore, an important point, not to permit the deformity to continue after tenotomy, but to reduce it by manipulation and stretching, while the patient is still under the influence of the anæsthetic. The operation of tenotomy is an easy one, requiring but ordinary care and little skill, although I have known of more than one fatal result following from erysipelas, and sloughing, and hemorrhage in this apparently trifling subcutaneous operation. The after-treatment, however, requires attention and careful management to prevent a recurrence of the deformity; should the latter occur, it would have been far better if no operation had been performed, for subsequent surgical treatment is much less satisfactory than if the case had been left quite alone.

Age for Operating.—There is another very important point: How early should you divide tendons in the treatment of club-foot? The very first case you may have to treat in your practice may be one of congenital club-foot. You turn to the authorities to learn the time for operating, and you find that Holmes in his "System of Surgery" says, that, "If at the expiration of the fourth week distinct contraction of the tendons remains in spite of assiduous efforts to overcome the deformity by manipulations, frictions, and steady but gentle employment of splint and bandage, or if benefit proportionate to the attention bestowed be not realized, or if the case unequivocally belongs to the second or third degrees of varus, the aid of tenotomy will be required to effect restoration."

Gross[1] says: "When the distortion is considerable I invariably employ the knife as a preliminary measure, and this may always be done with the most perfect safety even within the first four or five weeks."

Ashhurst,[2] in speaking of tenotomy, says: "In cases of ordinary severity tenotomy should be resorted to, the best age for the operation probably being between the second and third months of life." With the views just expressed, though with sincere respect for these authors, I cannot agree, and I shall presently give you my reasons, and at the same time show you in support of my views the practical results of another kind of treatment.

In discussing the varieties of congenital club-foot we will find that seve-

[1] System of Surgery, 5th ed., Phil. 1872, vol. ii. p. 1047.
[2] Principles and Practice of Surgery, p. 634, 1878.

ral can be readily disposed of, after which I shall devote my remarks particularly to the deformities which require the greatest care and attention on the part of the surgeon to insure complete success.

Talipes equinus is caused by the shortening of the common tendon of the gastrocnemius and soleus muscles, the tendo Achillis. It is seldom that this deformity if marked can be cured by any other means than the division of the tendon, yet I advise you never to operate until the child can stand or walk, then you get the best result possible, for in the joint motion the tendon and muscle are constantly stretched, which is not the case if the tendon is cut during infancy when the heel surely will become elevated. The tendo Achillis is divided just above its insertion, the heel is at once brought down by force if required, and the foot is held down by the band across the instep which is attached to the usual apparatus. In many cases of acquired club-foot there is not only a weak condition of the ankle, but it is well to bear in mind that more or less atrophy of the bones and muscles exists; in congenital club-foot this atrophy also exists, so that a brace affords the necessary lateral support not only to the ankle but for the entire limb. It is all-important to have the heel in good position, and this is done by pressing the foot well down in the shoe while lacing it up, then carrying over the strap before alluded to across the instep. The instrument consists essentially in a padded and well-fitting shoe, fastened in a steel frame, which has two bars running on the inner and outer side of the leg up to the thigh (in some cases only to the knee) united by a transverse bar below the shoe, having hinges opposite the knee and ankle-joints, and bands above and below the knee. (See Fig. 1.)

Fig. 1.

Talipes Calcaneus, a rare form of congenital club-foot, generally acquired as a result of infantile palsy, requires division of the tendons of the tibialis anticus, the common extensors, long extensor of the great toe, and the third peroneal (peroneus tertius) muscles. The apparatus required is the same as that for equinus just described.

Talipes Valgus (or splay-foot) is common as an acquired affection and occasionally requires division of the peroneus longus,and brevis, and sometimes, the tibialis anticus and tendo Achillis; such cases also need the same form of apparatus as described for equinus and calcaneus to keep the foot in good position, and forcible stretching is often required before the apparatus is applied.

Talipes Varus, the most frequent and important of the club-foot deformities, is generally associated with a greater or less degree of elevation of the heel, forming that variety known as talipes equino-varus. I lay more stress upon this form because probably more than ninety per cent. of all congenital cases belong to some form of varus, and because its treatment is often most wretchedly mismanaged; of the twenty-one cases of congenital club-foot which I have already referred to, all were examples either of varus or equino-varus.

Varus and equino-varus, if examined soon after birth, will show more

mobility of the tarsal articulation and foot pliability than you might be led to expect. The muscles at fault in varus are usually only the anterior and posterior tibials, and in equino-varus in addition to those named the tendo Achillis. But in most cases of varus you will find all the structures including the bones very susceptible to manipulation, so that the tarsal arch with all the other parts associated in the deformity may be pressed and stretched into a normal position. *All* cases of congenital varus and many cases of equino-varus can be cured by persistent stretching without any operation; therefore in these cases it is necessary that the treatment should commence at birth, and the nurse or attendant of the infant should be instructed how to daily manipulate the foot. I now show you an infant with double equino-varus, and, asking the mother to perform this simple operation before you as she is accustomed to do it, you observe that pressing in the prominent tarsus with the thumb, the rest of the mother's hand securely grasps the foot at the inner side, and by a steady outward movement and partial rotation the foot is at once brought into a normal shape; but it often happens, as in this case, that the equinus can only partially be overcome; this can readily be rectified by cutting the tendo Achillis when the child is ready to walk. It is sometimes well in stubborn cases of varus to keep up for some hours daily a continuous outward stretching, and this can be accomplished by the use of the shoe (see Fig. 2) which by the aid of the ratchet side motion, the foot being well secured, can be thoroughly everted; still this shoe should not be relied upon solely, for the foot of an infant confined in any apparatus necessarily brings about a want of circulation, atrophy, and often excoriations which retard, if not stop temporarily, all treatment.

Fig. 2.

Unless we have the weight of the body upon the foot as in walking, the equinus is likely to return. Even with a shoe, if the child does not walk, it is practically impossible to keep its heel properly down; it will be drawn up, and defeat your object. But if you defer tenotomy of the tendo Achillis until the child is able to walk or until it is two or more years old, if the elevation is not too great, you will on the contrary have the best results. When you have corrected the varus and the child is ready to walk, an apparatus is required to overcome the tendency to a recurrence of the deformity; years ago I commenced using a modification of the ordinary Scarpa's shoe, which simply allows a hinge motion at the ankle but in no wise everts the foot. To give this outward ankle-motion, the apparatus is arranged as follows: Taking an ordinary leather shoe, which should lace up in front, with the lateral steel supports running up above the middle of the thigh, with transverse braces and bands, a hinge is placed opposite the external malleolus, and opposite this point on the inner steel rod a portion has been taken out and replaced by a toggle joint, or double antero-posterior hinge (Fig. 3), which enables it to yield when the child bears its weight

on the inner side of the foot; the hinge on the outer side allows the foot to turn outward (Fig. 4). This I look upon as a valuable addition to the apparatus for children and one well worthy of your attention.

Fig. 3.

Fig. 4.

CASE I.—This boy, aged five years, which I now present to you with such admirable feet, so perfect that you would never suspect him to have been a subject of the worst form of equino-varus, was placed under my care shortly after birth with the request from the family physician that I would perform tenotomy; explaining the process of stretching and the value of such persistent efforts to his parents, and with their hearty co-operation; at the end of a year I had the pleasure of seeing the left foot entirely cured both as to the equinus as well as to the varus; in the right foot at the age of three years there was an equinus remaining, so I divided the tendo Achillis, the varus having been entirely cured. When this child was ready to walk, I told the father, Mr. W. P. Thomas, of this city, who has had considerable mechanical experience, that if he could arrange, as he first suggested, such a joint at the inner ankle as would give to the parts an outward motion as the child placed the foot on the ground, I thought it would be of even more service than the daily stretching which the child had been subjected to; he at once constructed the toggle joint which I have just shown to you; this I have been using ever since with excellent results. It has been suggested that the treatment by stretching is very slow, and that much time might be saved by tenotomy. To this I answer that unless even more care is devoted to an infant's foot after tenotomy, than in the simple stretching process, the results will be far from satisfactory, and that a club-foot neglected after operation is far less amenable to treatment than a club-foot that has never been treated at all. It is not well to keep constantly upon a child recovering from club-foot an apparatus after a good position has been obtained. I am in the practice of allowing the child to wear for an hour or two daily a pair of slippers, in order that the ankle-joint shall have all kinds of motions during the child's play; this I look upon as important: and, in regard to the use of mechanical apparatus at night, I am quite convinced that, as it is unwise to use any such apparatus for the infant, so it is unnecessary for the child;

the limb develops better, and a good stretching before the child is put in bed is far better than any apparatus which confines the limb during sleeping hours and retards the circulation and growth.

In considering the unyielding, rigid equino-varus which we often see in after years as the result of want of care after operations, and in those cases in adults where no operation has ever been performed, we find that the section of tendons and fascia, although accomplishing with apparatus considerable, is not by any means sufficient to insure a cure of many deformities, and for years past I have been in the habit of poulticing such stiff, rigid feet for a fortnight or so before operating, in order to thoroughly soften them, and it is wonderful how much is gained by this simple procedure. Then, under an anæsthetic after the division of all the tendons involved in the deformity, I apply either the "foot stretcher" (Fig. 5) which I devised some years ago, or the one gotten up at my suggestion by Kolbé, and with either of these force the unyielding bones at once into as correct a position as possible; and this operation may be repeated as often as may be necessary. The apparatus is simple: it consists of a block of wood on which there is fastened an inverted and well-padded horse-shoe, into which the heel of the foot is secured by straps passed through the slots, over the instep; a pad draws strongly upon the projecting tarsus by means of a powerful screw, another band and screw is connected with the forward part of the foot, and makes traction in the opposite direction; an immense force is thus brought to bear upon the deformity; flexion and rotation of the foot is readily obtained by moving the wooden block. The apparatus is applicable to either foot. The other stretcher is a more powerful apparatus, and can be used upon either foot; a glance at it shows you its applicability (Figs. 6, 7). I have never known any injury result from this method of treatment, and I say to you that without some such apparatus, you will not be able to cope with many of the old deformities to which I have referred.

Fig. 5.

It is in most cases necessary to divide the plantar fascia; this you can readily do by a division of the tense tissue readily felt running lengthwise on the inner and under side of the foot. In illustration, I now show you several other cases bearing on my statements in regard to the plan of treatment of congenital club-foot by stretching or combined with division of the tendo Achillis.

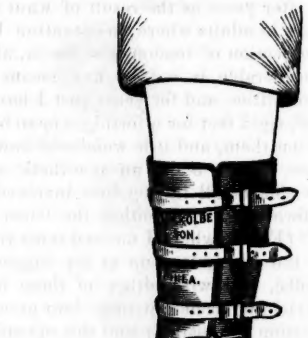
Case II.—This little girl, eight weeks old, was born with bad equino-varus of both feet; by continued daily stretching by the hands of the mother she has very much improved, the varus is readily rectified and the equinus is improved; when the child is ready to walk the tendo Achillis may require section; the parent is directed to continue the manipulations, and to present the child every month or so for inspection.

Case III.—This infant three months old has, on account of a double congenital equino-varus, been subjected to stretching since birth; the positions of the feet are nearly normal, and I think that manipulation alone will

be sufficient. You will notice the excellent position of the tarsus, and my ability to get rid of the equinus with a moderate force.

Fig. 6.

Fig. 7.



Case IV.—This boy, now seven years of age, was born with double equino-varus, and is a brother of the child last presented to you. He now has perfect feet, and all this has been accomplished without tenotomy, by the lad's mother, and from her success with the boy she is thoroughly satisfied that her efforts with her infant will be successful. He now has no need for any brace, which indeed he has not worn for more than a year.

I need not now adduce any other cases in support of my practice, but may say to you that I have brought a large number of similar instances before the Philadelphia Academy of Surgery during the present year to show the importance of the treatment by stretching.

Cases V. and VI.—Of the two cases I have for operation this morning, the first is this lad Eugene D., aged six years, who was born with equino-varus; when nineteen months old the varus was cured by manipulation, but he subsequently required division of the tendo Achillis for an equinus. He has an excellent foot, with a tendency to varus, which a shoe will not rectify because the plantar fascia is the cause of the inversion. This must be divided, which I now do, the patient being etherized. He shall now wear this shoe (Fig. 8). At its outer edge, an elastic band is attached which is connected to the apparatus below the knee. This draws the foot upward with each step, and tends to evert it at the same time. I have spoken to you of neglected club-foot, and here you have an example. This girl, of seventeen years of age, has congenital equino-varus; she was admitted into the hospital, Dec. 13th, with an exceedingly rigid foot. She has walked so long on the outer side of the foot that the tissues from the constant pressure are very dense. The heel is also

drawn up. Now such a case would yield but slight results from a tenotomy operation alone. The foot has been enveloped in a flaxseed poultice day and night for the past week, and the good effect of this course is here shown. The skin and subcutaneous tissues are now very pliable. In order to relieve the equinus, I place the foot on the stretch and divide the tendo Achillis and the separation between the ends of tendon is at least an inch, and I divide the plantar fasciæ, overcome the varus, and, with force, rupture the unyielding tarsal tissues, and at once rectify the malposition.

Fig. 8.

I frequently, especially in adult cases, where much force has to be used, apply for the first week or so a right angle posterior felt (Fig. 9), pasteboard or tin splint; if the latter, there should be a good opening for the heel; the splint should be carefully padded so as to avoid excoriations; after a time the regular walking shoe is substituted.

From the remarks I have made to you this morning, it will be evident that my object has been to discourage tenotomy in infantile life; that talipes equinus, calcaneus, and valgus can be readily and successfully overcome and seldom give rise to difficulties in their treatment; that all cases of congenital varus can be cured without operation if attended to early, and that the equinus, which is so often associated with varus, not infrequently requires division of the tendo Achillis, but that this operation should *never* be done until the child is ready to or has commenced to walk, for at this time you have to aid you in the cure, the constant flexion and extension of the foot, which must necessarily occur with every step. Then the use of the toggle joint, as I have described to you, will overcome the disposition to a recurring varus, which has to be guarded against for a long time. Then again, I have urged the importance of not confining children's feet too long during the day in any apparatus, for club-foot is essentially due to an arrest of development, and our efforts should be to encourage the growth of the limb, by the means already referred to, and that excellent results are observed in a freer ankle motion if the child be allowed to play for an hour or so each day without any apparatus.

Fig. 9.

I have thus briefly given you my experience in the treatment of club-foot, and I am quite sure that if you will give the subject your careful consideration, you will abandon the use of tenotomy, at least in the very early treatment of this deformity, and trust rather to the various methods which I have endeavoured to impress upon you.

LECTURE INTRODUCTORY TO THE STUDY OF THE ARTHRITIC DIATHESIS.

Delivered at the London Hospital.

By JONATHAN HUTCHINSON, F.R.C.S.,
Senior Surgeon to the London Hospital.

It is my purpose, Gentlemen, to bring under your notice the peculiar and very important group of diseases to which our forefathers applied the term arthritic. You are well aware that although this term, used according to strict etymology, means any inflammatory affection of a joint, yet that, conventionally, it has been restricted to certain morbid conditions in which a remarkable tendency is shown for many joints to suffer, and to suffer repeatedly. An arthritic person is one who over and over again suffers from inflammation, more or less transitory, of his joints, and who is so liable to it that he knows what are the influences which are likely to produce an attack. It is thus quite clear that a tendency to arthritis in this sense is a constitutional one. Other diseases of joints may be local, but true specialized arthritis, although often excited by local causes, always has in the background a constitutional peculiarity as its source. To this constitutional peculiarity we give the name of diathesis; and when we say of any one that he is the subject of the arthritic diathesis, we mean that he is in that bodily condition—of that organization—which renders him liable at some time, and under suitable provocations, to become the subject of active arthritic manifestations. It by no means follows that an arthritic man is always, or even often, suffering from arthritic maladies, any more than that the witty man is always brilliant; it is sufficient in each case that the basis qualification, the potentiality, be there. In each it is quite possible that the possessor of such qualification may go through life, and transmit to his successors his possession, without having ever himself exhibited it in an unmistakable form. Now, although liability to joint inflammation is the feature which gives its name to the arthritic diathesis, I must warn you against the notion that it is the only phase by which that diathesis manifests itself. It would be strange, indeed, if such were the case, and if it were possible that a constitutional state could exist which should give proclivity to inflammation of the joints, and should exempt wholly the other tissues. Although the joints suffer chiefly, and present the most prominent symptoms by which we recognize the diathesis, yet they take simply the first rank, and by no means an exclusive one. There is no structure in the body that may not be attacked. We have, possibly, arthritic dyspepsia, arthritic renal disease, arthritic pneumonia and bronchitis, arthritic affections of the skin; it is certain that we have many arthritic affections of the fascia, muscles, nerves, and eye. Hence, in part, arises the great importance of the subject to which I invite your attention.

Here we may suitably pause to assert that arthritic inflammations, whether strictly arthritic in the sense of attacking joints or otherwise, have a peculiarity of type. This peculiarity is such that by it alone their true nature may often be guessed in cases where other points of evidence are defective. They are, as a rule, remarkable for suddenness of onset, rapidity of development, and certainty of decline. If, however, there is a strong tendency to spontaneous decline, there is also one equally strong to future recurrence. There is about them all a here-this-week,-gone-the-next,-certain-to-come-again-some-time quality, which is most characteristic. As a rule, they are all, when at height, attended by very severe pain, and relatively to the intensity of the inflammation there is but little

tendency to disorganize. Above all, in strong contrast with other inflammations, they show no tendency to cause suppuration. Lymph effusions there may be, and adhesions may result, slow alterations in the forms of bones and in the texture of ligament and cartilage may take place, but these are unusually trivial in proportion to the apparent intensity of the inflammation. It is a matter of astonishment to every one who watches these cases how surprisingly good reparation is when the attack passes off. In many cases it is not perfect, but in almost all it surpasses the expectations formed even by well-skilled spectators. I leave aside for the present certain forms of what are called arthritis, in which the malady appears to persist, and to produce, by slow, uninterrupted processes, great ultimate disorganization. These are very exceptional as to number, and far less so as to character, than they have been supposed, and they by no means invalidate the general statement that arthritic maladies are, as a rule, paroxysmal in character and remarkable for the excellence of the recovery which follows. If you hear of a man having had repeated and violent attacks of pneumonia, from each of which he has recovered perfectly; if of another that he is laid up every spring with severe iritis, yet every summer appears to see nearly as well as before; if of a third that he is frequently the subject of joint inflammations, whilst yet he never becomes disabled, you may in each case make a safe guess that the malady in question was of the arthritic type. The knowledge of this tendency to spontaneous recovery is of the utmost use to us in prognosis.

I have been hitherto speaking of the arthritic diathesis as if its existence were acknowledged by all nosologists, and it is time that I should admit that this is in the present day by no means the case. The term is a decidedly old-fashioned one, and if I venture to ask you to employ it, the duty devolves upon me of defending it and of showing that it is one based upon clinical fact. In the present day we are taught to speak of gout and rheumatism as essentially different maladies, yet both come into the old category of arthritis. Respecting rheumatic gout and the various forms recognized under the name of chronic rheumatism, although there is much difference of opinion and many contradictory statements extant, yet I believe I am right in stating that the balance of authority is in favour of the belief that they stand distinct, both from gout on the one hand, and acute rheumatism on the other.

Let me here attempt a brief glance at the kind of facts with which in the following lectures we shall have to deal, and at the terms by which they may most appropriately be designated. Let me also beg of each one of you to be most careful in defining his terms, for there will be no hope of our getting to the bottom of a complex question like the present one unless we are studious, on the one hand, to get clear and vivid conceptions of facts, and on the other, to use words in reference to them which we all employ in the same sense.

The time-honoured name of "gout" is one which is well understood, and of which the equivalent has been used from the days of the Romans, with singularly little difference of opinion as to the cases to which it is applicable. If the case be well characterized every one can recognize gout, for its symptoms are most definite, and almost every one, lay as well as medical, knows what they are. All that we have said as to the peculiarities of arthritic maladies finds a most definite realization in the case of gout. It is paroxysmal with a vengeance, and in it suddenness of onset and of decline, persistency of liability, and comparative freedom from local disorganization, find emphatic illustration. To these general characters we may add that gout usually attacks the smaller joints first, giving, indeed, primal preference to that of the great toe, that its acme is marked by great swelling of the parts external to the joint, by a glossy skin, which pits on pressure, and which desquamates when the attack is past, by the most intense

pain, and by great disturbance of health, more especially of the nervous system. Modern pathological research has given increased prominence to another symptom long well known. I allude to the secretion of chalk, or of a substance which looks like chalk. This salt, the white lithate of soda, is formed so constantly in gout that its presence or absence may, I think, be taken as the line of demarcation between true gout and rheumatic gout. Unfortunately, it is only in the latter stages of the malady that the presence of this salt can be proved during the lifetime of the individual. In advanced cases of gout we may find concretions about the affected joints or in various other parts, more especially in the cartilages of the ears. The researches of Dr. Garrod would tend to show that the examination of the blood during the paroxysm, and the detection of lithic acid in excess in that fluid, is always a pathognomonic and reliable symptom. It is unfortunately, however, one difficult of application, and in a majority of cases not available. The valuable researches referred to, supported as they are by a multitude of pathological data previously and since recorded, have, however, enabled us to place this symptom in the foremost rank in reference to the diagnosis. I believe I am giving you a definition which all will accept when I say that we count as gouty all manifestations which occur in connection with a state of health in which lithic acid is present in excess in the blood, and in which there is a tendency to the deposit of its salts in the tissues. You will note that we by no means require absolute proof of the presence of lithate of soda at any given time, or in any given case. If you have succeeded in making yourself and others believe that certain symptoms are essentially connected with a state of health which usually has for its result the excessive production and depositing of this salt, then you have succeeded in convincing yourself that those symptoms are in essential nature gouty. Perhaps not in one case in twenty in which we diagnose gout do we prove lithate of soda, but we ground our opinion upon the close resemblance of the symptoms to those in other cases in which lithates were demonstrably present. And mark again, I by no means join with those who regard the presence of lithate of soda as the true beginning of gout, or even as an essential phenomenon. It is only one of many concomitant results of a special state of the system—special as regards inherited organization, as regards digestion, assimilation, and excretion—but it is one so definite and so frequently present that it may be very suitably selected as the characteristic on which to base a conventional name. I have already implied, and shall assert more explicitly soon, that I regard the attempt to separate rheumatic gout from true gout by an abrupt line as a violence to sound pathological doctrine. It is very desirable, further, that you should not narrow your conceptions of the meaning of this important word. It is incorrect to say of any man "he has got the gout," in the same sense that we should say "he has got syphilis," "he has caught the measles." There does not exist any such abstraction as "the gout," or perhaps I ought to say there is no such entity. A man may *become gouty*—that is, his assimilation may have been slowly changed, and all his tissues modified in character, so that they may be liable to inflammations of the gouty type—but he cannot receive into his system *de novo* the malady "gout," for the simple reason that no such entity exists. I repeat that a clear conception on this point is essential, for unless you have it you will never make due allowance for the modifications which the gouty diathesis is so prone to undergo. It is precisely because it has been built up as the slow result of numerous complicated and prolonged influences that no two cases are precisely alike, that although the well-marked examples of it are very peculiar and utterly beyond all dispute, there are others, the recognition of which will task to the utmost the skill and insight of the physician. Nothing is easier in the cases I refer to than for equally well-informed and candid observers to become involved in an inter-

minable war of words. Recollect, then, that our definition of gout is a conventional one, and that it applies to the better-marked states of system which are susceptible of the most multifarious complications and of endless modifications in degree. Thus it is quite fair, quite consistent with probable truth, to say of any given case, This is not gout, but it is closely allied to it—a phrase which, in the instance of a syphilitic malady, would be simply nonsense.

Having thus attempted to define the class of maladies which we may properly call gouty, we will now turn to the subject of chronic rheumatism or rheumatic gout. This malady, like true gout, has long been recognized, and many have been the debates as to what name it ought to receive. It presents even greater varieties as to form and severity than gout itself, and hence many discrepancies in authors respecting it. We will again endeavour to take pathological results as the basis of our definition. The results of rheumatic gout to the joints affected are very peculiar. There is no deposit of lithates, but there is a change in all the textures of which the joint is composed. The synovial membrane thickens, and its fringes become developed, from which pedunculated or loose cartilages at length result. The ligaments soften and stretch, and the cartilage becomes fibrous and splits up or wears away. But whilst these changes are going on in the soft parts, yet more characteristic and permanent ones are happening in the ends of the bones themselves. These, in mild cases, have rows of little nodosities developed on the line of junction between periosteum and cartilage, whilst in more severe ones these nodosities become confluent, and constitute projecting lips, often of very considerable size. In the worst cases all the ends of the bones alter remarkably in form, and become expanded to twice their original size. In some cases there is great expansion, with but little evidence of wearing away; in others the bone eburnates instead of expanding, and retains its form, but becomes polished and fluted by friction. In aggravated cases great crippling and great deformity is the result, and hence one of the names by which this disease is known on the Continent—*arthritis deformans*. But here let me raise protest that it is not every case of rheumatic gout which is deforming—not the majority, rather a small minority, and those chiefly in patients who are elderly. Rheumatic gout is a very common malady, far more common than true gout, and if, before we pronounce on its existence, we wait for the manifestation of visible deformity, we shall miss the diagnosis of all the milder cases. I have often taken occasion in this theatre to warn you against the too common mistake of selecting for study and for record only the most exaggerated and intense forms of a malady. Endless are the misconceptions which have resulted from this error, and few subjects have suffered more from it than the one under consideration. If every subject of the gouty diathesis would be kind enough to carry about specks of chalk in his ears, the recognition of gout would be easy enough; and in like manner we could easily tell rheumatic gout if all its subjects had their limbs crippled and deformed. But it is not so, and in each instance we are, in a majority of cases, thrown upon our ingenuity for the discovery of other and less obvious guides to the knowledge of our patient's real state.

Of the peculiarities presented by joints which have suffered from rheumatic gout, two stand out before all others in their value as means of diagnosis—I allude to the dry grating caused by the removal of cartilage, and the development of lips. We may venture to assign the chief place to the second of these, for it is the one which is earliest to be found. Grating is never present excepting at an advanced stage, and although very characteristic then, its value becomes, of course, much limited by that fact. Nodosities and lips, on the contrary, are amongst the very earliest of the products of this malady, and are often, indeed, present before the patient is aware that he has had any inflammation in the joint

concerned. Nor have we, so far as I know, any reason to think that they occur to any characteristic extent in association with any other causes.[1] On the contrary, I believe that their diagnostic value is as great in rheumatic gout as is that of chalk concretions in true gout. Our differential definition of rheumatic gout may then, I think, be based on these peculiarities, and we may say that any form of joint disease which tends to the production of lip-like outgrowths at the margins of the cartilages has a claim to be placed in this category. I have already hinted that there are many varieties, some of them probably of considerable clinical importance, which are grouped under this head, and that in a certain large group, occurring in patients under middle age, whilst removal of cartilage is common, outgrowths of bone are rare, and if present usually small.

For the last few years I have been in the habit of using these outgrowths for the purpose of diagnosis in a somewhat novel way. I had often been struck by the remarkable prominence of these rheumatic lips on the condyles of the femur in museum specimens, and it occurred to me that they ought to be perceptible during life. I examined the knees of a few patients who had the disease in an advanced stage, and found that I could detect them very easily. Afterwards, with some practice, I found that I could appreciate their presence even in comparatively early stages, and also that they are frequently present when the patient has no external deformity whatever. By degrees, and after the examination and comparison of a great number of patients, I have come to rely with much confidence on this symptom. If you wish to employ it successfully, you must first practise carefully on healthy joints. In many, if not in most, there is a ridge at the part referred to, more or less resembling the pathological lip. The distinction between health and disease can only be acquired by practice. In examining a knee, I prefer to place myself in front of my patient, and to employ both hands at once. I place the finger-tips of one hand flatly over the edges of the one condyle, and those of the other on the opposite, and then direct him to bend and extend the joint slowly several times in succession. In this way you may find the edges and appreciate their elevation without risk of error. I much prefer to use the fingers flatly at first, and not to employ their tips, as I think there is less risk of error in estimating elevation; but afterwards I use the tips in order to determine whether the lip overhangs. In well-marked cases it curls outwards.

These condyloid crests, as I have already observed, are not to be expected in all cases. As a general rule they are present only in those who have passed middle life. You must not expect to find them in the young. In the latter, absorption of cartilage without osseous outgrowth is the rule. In the aged, however, these crests are invaluable as symptoms. I have very often recognized them in cases in which the patients were not aware that the knees had ever suffered. I have often been able by their aid to say which knee had suffered most frequently, and have found the patient's statement confirm my inference. The symptom is of especial use in those cases in which we are consulted, not on account of joint affections, but for iritis, or lumbago, or a skin disease which we suspect to be of arthritic origin.

I have hitherto said little or nothing as to clinical peculiarities of rheumatic gout, beyond a hint that they are by no means the same in all cases. I intend in a subsequent lecture to consider them in detail, but for my present purpose I

[1] I have just seen a case somewhat exceptional to this statement. A young woman under the care of my colleague, Mr. McCarthy, had her limb amputated on account of a myeloid tumour in the tibia. She had never been rheumatic, but there were present small lips on the edges of the condyles. No doubt the joint-changes had been induced by the proximity of the tumour.

must here give a short sketch in order to contrast them with those of gout. In many cases rheumatic gout begins insidiously, the patient being simply liable to attacks of aching in one or more joints. It affects large and small joints almost indiscriminately. It is remarkably prone to produce synovial effusion. Almost all cases of so-called hydrops articuli belong to it. Unlike gout, and unlike acute rheumatism, it but rarely causes redness of the skin, and the shiny surface and œdematous pitting are scarcely ever present. Its paroxysms are often prolonged or of indefinite duration, but in some cases, contrary to the general belief, I must assert that they are as short and definite as those of gout itself. In other cases —and these are those more nearly allied to rheumatism than to gout—the first attack sets in severely and affects many joints. In these, instead of getting well at the end of a month or five weeks, as acute rheumatism is in duty bound to do, the disease lapses into a chronic form, and the patient may perhaps become an invalid for the remainder of his life. Still, even in these persistent cases there are generally observed remissions and paroxysmal recurrences. The pain which attends rheumatic arthritis never rises to that extreme severity which characterizes gout, but it is often bad enough.

Rheumatic gout presents great difficulties as to diagnosis in two different directions: there are cases which the physician can scarcely tell from acute rheumatism; there are others, and very different ones, which it is almost impossible to distinguish from true gout. My own belief is that in each of these instances the difficulties are insuperable, for the simple reason that the maladies in question do really merge into each other, and that the features characteristic of each exist in union.

On the third great subdivision of the arthritic family I shall not now speak. It is that of rheumatic fever or acute rheumatism.

Here then, gentlemen, to recapitulate, we have glanced at the three large subdivisions of the arthritic family; we have seen that gout is peculiar in having deposits of lithate of soda, rheumatic gout in having in the young ulceration of cartilage, and in the old absorption of cartilage with outgrowths of bone, and acute rheumatism in having synovitis without permanent articular changes, and in being very prone to damage the heart. Our next question is, Are these three maladies really related or not, and if so, to what do they owe their individual peculiarities? Let me insist that it is a question of relationship merely, not of identity. No one denies that there are most important differences between the three—differences which it is wise and convenient to recognize by distinctive names. Still, however, the question of relationship remains a most important one. I may here conveniently admit to you, as, indeed, I have perhaps already done, that all three depend upon the same diathesis or constitutional state, and that their differences are due to the varying conditions as regards age, sex, temperament, habits of diet, exposure to climate, etc., to which the possessors of this diathesis are exposed. You will easily, I think, see that it is of great practical importance to answer this question correctly. If relationship be admitted, there is little doubt that our opinions as to the treatment of each will receive some modification. It is not, however, as regards the principles of treatment that most is to be anticipated, for the differences between the three when in actual existence are quite sufficient, however they may have been acquired, to make it probable that great differences in treatment will be necessary. As regards prevention, as regards the general management of health in those in whom the diathesis is as yet latent, or in those who are known to be descended from arthritic subjects, much more may be expected. Very probably we may find that the same general measures which prevent the one will also ward off attacks of the other. There are also other important and common maladies respecting which

our notions will be much cleared if we can decide whether there does or does not really exist an arthritic diathesis which is the common parent of gout, rheumatism, and their allies. I allude to such maladies as brow-ague, lumbago, sciatica, recurrent iritis, gonorrhœal rheumatism, and certain skin diseases. In trying to ascertain whether any one of these is really dependent upon an arthritic diathesis, we are at once met with the difficulty—What constitutes proof of that diathesis? If one patient with recurrent iritis tells me that his mother was crippled with "rheumatic gout," but never had "gout," and another that his grandfather was a martyr to "chalk-stone gout," how am I to interpret the facts? Am I to say that the two histories, referring to totally distinct maladies, help me not at all to an explanation of iritis, or am I entitled to assume that in both the facts imply the existence in the family of the arthritic tendency? Such questions meet us every day in practice, and the advice which we give our patients is based upon the opinions respecting them which we chance to hold. I need say no more to enforce upon you the importance of the investigation which I propose to commence.

We must next ask, How shall such a question be set at rest? On what data can we determine the relationship or non-relationship of any given maladies? On this point I must confess I have not been able to find much information in the works which I have consulted. Although the question has been much debated and with great ability, yet I cannot help thinking that it has never been stated with sufficient precision. The proofs of relationship between any two given diseases must be of the same character as those by which we should prove alliance of any species in animals, and first among them stands, Are they the offspring of a common parentage? First cousins or even brothers may be of very different aspect; but prove their descent, and you prove their relationship. In respect to gout and rheumatic gout, it appears to me that physicians have been far too much concerned with the examination of differences, and have almost forgotton to ask, Are they not producible by the same causes and influenced by the same circumstances? I fully admit that the investigation of the cause of these maladies is surrounded with difficulties, but nevertheless much has been, and much more may yet be, effected, not only by the critical investigation of individual patients, but by ascertaining whether any given races, or any given climates or occupations, are particularly prone to produce them. If, for example, it be found that gout and rheumatic gout prevail in excess always in company, —that the same race, the same climate, the same sex, and similar ranks in society, are liable to both,—the inference as to identity of cause would become strong. Then, again, we have data of great value derivable from the history of hereditary transmission. If I succeed in making it probable that gout and rheumatic gout prevail in the same families, and that of the children of a gouty father some suffer from rheumatism and others from true gout, I feel sure that your inference from the fact will be that it is probable that the diathesis is the same, and that it derives its peculiarities in each instance from some other special conditions in each sufferer—sex, temperament, etc.

Thirdly, we have the test of hybridism. Is it possible to mix up gout and rheumatic gout together, or rheumatic gout and true rheumatism, so that the characteristic features of the two shall be blended? Of course it is very possible for two quite distinct maladies to prevail by mere chance in the same person at the same time; but if we find that this admixture is common—that it is, in fact, the rule rather than the exception—then, I think, most will agree that such easy blending is strongly in favour of prior relationship.

MONTHLY ABSTRACT.

Anatomy and Physiology.

A Spinal Root of the Optic Nerve.

STILLING, of Strasburg, showed preparations to the International Ophthalmological Congress at Milan, in September last, which he believes demonstrate the existence of a spinal root of the optic nerve, which brings the retina into direct connection with the medulla. This root passes from the external corpus geniculatum, in a winding course, deep between the bundles of the crus cerebri, and can be traced into the pons; and it appears to course down in the direction of the medulla, although its further progress cannot be demonstrated. The existence of this branch is interesting on account of the light it throws on certain physiological relations between the medulla and the retinæ, and may constitute the hitherto undiscovered link between certain diseases of the spinal cord and of the optic nerve.—*Lancet*, Nov. 27, 1880.

The Effect of Exertion on Temperature.

Dr. BONNAL, of Nice, has been experimenting on the effect of muscular exercise on the temperature of the body. The observations were made on four individuals, the temperature being taken in the axilla, popliteal space, groin, foot, hand, mouth, and rectum. The investigation has been prosecuted during four years, and the conclusions reached are the following: All muscular exercise, even if of short duration, raises the temperature of the rectum, rarely, however, to a point exceeding 101° F.; but the rise occurs invariably, at whatever hour the exercise is taken, whether before or after rest, and independently of age, sex, and meteorological conditions. The effect bears no relation in degree to the duration of the exercise, or to the apparent fatigue. The influence of the same exertion, under identical conditions, varies in different individuals, and in the same individual at different times. The physical altitude, the state of the atmosphere, and the amount of clothes, exercise, as might be anticipated, a marked influence on the degree, and especially on the rapidity, of the rectal rise in temperature. On the other hand, however, the absence or abundance of perspiration has no appreciable influence on the variations in temperature during movement. Rest, after a given exercise, always determines a fall in the rectal temperature, more considerable and more rapid the shorter the exercise. All exertion which causes a great acceleration of the pulse and respiration lowers the peripheral temperature (mouth, axilla, groin), but the fall is immediately recovered from on rest, the rectal and peripheral temperatures becoming equalized, or resuming their normal difference —about two-thirds of a degree Fahrenheit. The greatest elevation by exercise which was met with amounted to 103.2° F., in the case of a celebrated runner, aged thirty-one years, who had just run eleven miles in an hour and a half without stopping, and without any other effect than an elevation of the pulse to 145. If the rectal temperature is below 98.6°, a moderate exertion, such as a gentle walk of a mile on level ground, raises the temperature up to the normal, even though the necessary rise amounts to 1½° F. But if the temperature is already above 98.6°, the same exercise will not raise the temperature more than .4° or .8° F. In a rapid ascent the greatest elevation of temperature almost always occurs dur-

ing the first half hour; if the ascent is continued, the temperature may remain stationary, may be raised .2°, or may fall .2° or .3°. Some other observations which corroborate the fact that gymnastic exercises cause a rise of temperature are not of special interest. The account of the investigations has been communicated to the French Académie des Sciences.—*Lancet*, Dec. 4, 1880.

Materia Medica and Therapeutics.

Anæsthesia by Application of Chloroform to the Skin.

Dr. BROWN-SÉQUARD, who has recently brought before the Society of Biology an extremely interesting series of observations (see MEDICAL NEWS AND ABSTRACT, Jan. 1880, page 17), indicating the somniferous and anæsthetic influence of chloroform, when applied to the skin of guinea-pigs, showed, at the sitting of November 20th, that the effects are not produced through the blood, but through the nervous system; since, after division of the spinal cord, the effects were found to be absent when the chloroform was applied behind the seat of the medullary lesion, but to be present when it was applied in front of the lesion.—*British Med. Journal*, Dec. 18, 1880.

Eucalyptus Oil as an Antiseptic.

Dr. BASSINI contributes to the *Annali Universali di Medicina e Chirurgia*, September 1880, an exhaustive article on eucalyptus oil as an antiseptic. He was induced to experiment on this substance by some suggestions made in the *Centralblatt für Chirurgie*, 24th January 1880, in which it was proposed to supersede the use of carbolic acid by the above disinfectant. Eucalyptus oil is an ethereal preparation, citron colored, possessed of a penetrating odor, and mixing easily with alcohol or paraffin. The most practical method of using it, however, was found to consist in mixing the oil with a small quantity of carbonate of magnesia, after which it could be made to readily dissolve in water in the proportion of about 1 per cent. The author's experiments extended over six cases of intentional wounds in animals, and six surgical operations in the human subject, comprising removal of a breast, opening of a chronic abscess in the neck, hydrocele (two), removal of a fibro-lipoma, and a large incised wound of the leg. The observations were not continued further, the result obtained having been considered very unsatisfactory. The author thus sums up his conclusions. 1. Eucalyptic dressing (10 parts of eucalyptus oil as above prepared to 100 parts of wax or paraffin spread on gauze) causes intense annoyance to the greater number of patients by its disagreeable and penetrating odor. 2. Infiltration takes place much more readily with this dressing in the lips of the wound and surrounding tissues, and consequently there is a greater tendency to suppuration. 3. In certain cases, on removing the dressings, an odour of putrefaction was perceived, which showed that the antiseptic qualities of the substance could not be great. 4. The frequency with which eczema appeared on the parts covered by the dressing leads the author to suppose that this substance must have some specific action on the skin.—*London Medical Record*, Dec. 15th, 1880.

Tripolith—a Substitute for Plaster of Paris.

Prof. VON LANGENBECK introduced a new material for fixative dressings at a recent meeting (November 7th) of the Berlin Medical Society. Tripolith, so called on account of its hardness and power of resistance, was discovered by Mr.

B. von Schenke, of Heidelberg, in the course of last summer; and was exhibited, and obtained a premium, at the Exhibitions in Brussels and Mannheim. It was originally intended for stucco and decorative purposes, for which, on account of its greater lightness after drying, and its power of withstanding damp, it is said to be better adapted than plaster of Paris. Its mode of fabrication is not known, but its chief constituents are calcium and silicium, with a minute portion of iron oxide. Tripolith forms a gray powder, which to the touch is finer and softer than plaster of Paris, although of the same weight in the rough condition. An unfortunate accident in Berlin first led to its introduction into surgical practice. The local agent of Messrs. von Schenke broke his arm, and Professor Krönlein, who treated him, applied a plaster-of-Paris dressing. In due course, the dressing had to be changed, and the patient then remarked that he knew of something which would prove better than the plaster of Paris, and accordingly a tripolith dressing was applied. It answered so well, that since this time it has constantly been used at the Royal Clinical Hospital and also in private practice. Tripolith bandages are prepared and applied exactly in the same manner as their plaster prototypes. After the limb has been wrapped in a flannel bandage, gauze bandages filled with the powder are soaked in water and applied in the usual manner. A little thin solution of tripolith is then rubbed in. The charged bandages must not remain too long in water, nor must the mixture be made too thin, nor stirred too much. The advantages of tripolith over plaster of Paris are the following: 1. Tripolith appears to absorb moisture from the atmosphere less freely than plaster, and its power of setting is not lost even after long exposure to the atmosphere. The first lot received from Heidelberg was forwarded in a common sack, in which plaster of Paris would infallibly have been ruined. 2. Tripolith bandages are lighter, and therefore pleasanter to the patient. Thus an equal volume of liquid plaster of Paris, fresh, weighed 604 grammes; of liquid tripolith, 568 grammes. When dried the plaster weighed 470 grammes, the tripolith 413 grammes. Thus tripolith is about 14 per cent. lighter than plaster of Paris. 3. Tripolith dressings harden more quickly than plaster. While a bandage made with the best plaster requires ten to fifteen minutes before it is quite set—and in wet weather often remains soft for hours—tripolith sets completely in three to five minutes. On the other hand, it gives off vapour for many hours, and even after twenty-four feels moist to the touch. 4. Once hard and dry, tripolith absorbs no more water. A piece of dried tripolith dressing undergoes no change when laid in water. It would be possible, therefore, to allow a patient to bathe in his tripolith dressing, provided means be taken to prevent the water getting up inside it, by means of an India-rubber covering; while as regards plaster it is necessary to paint it with dammar varnish in order to make it waterproof. 5. Tripolith is a trifle cheaper than plaster of Paris.—*Med. Times and Gazette*, Nov. 27, 1880.

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Vesical Irritation from Blisters.

At the Paris Société de Médecine Pratique (*L'Union Med.*, Nov. 23, 1880), M. JULLIARD observed that it had been recommended, in order to prevent the action of cantharidine on the bladder, to mix some bicarbonate of soda with the emplastrum lyttæ, but that this was difficult to do in Paris, where the blisters are spread on plaster; but the same end is obtained by adding some liquor potassæ of the British Pharmacopœia. He also recommends, on the application of a blister, that some alkalized mineral water should be drunk. M. Aubrun believed that the irritation is produced by allowing the blister to remain on too long. He thinks that the addition of camphor is useless. He is in the habit, when he

applies a blister, to have the skin first well rubbed. The blister will then take at the end of five or six hours as well as it would otherwise have done in twelve hours; and when he has acted in this way he has never met with vesical irritation.—*Med. Times and Gaz.*, Dec. 11, 1880.

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Pilocarpine in Skin Diseases.

Prof. PICK, of Prague, communicates to the *Vierteljahrschrift für Dermatologie und Syphilis*, I. 1880, an interesting paper on this subject. Various salts of pilocarpine were employed, especially the muriate, about $\frac{1}{8}$ grain being administered by the mouth or subcutaneously. When protracted sweating was desired, the remedy was taken twice a day, the patient being confined to bed. In other cases confinement in bed was not insisted on; and when warm weather exercise out of doors was permitted; the best time for giving it seemed to be one or two hours after the morning and evening meal. When the remedy had been continued three or four weeks, the effect became less marked, and the dose had either to be increased or the medicine intermitted for some days, when the same dose was again quite efficacious. An important difference in the order of appearance of the physiological effects was seen in some instances. Of 30 individuals, in 21 the internal administration caused first increased flow of saliva and afterwards sweating, while subcutaneous injection induced sweating first, then salivation. In the remaining 9 both methods caused salivation first. Continued use of pilocarpine exerted an important influence on the oiliness of the hair and on its growth. The skin became softer, more pliant and satiny; comedos and papules of lichen pilaris could be more easily pressed out or got rid of, the scurfiness of the scalp became less or disappeared, the hair was less brittle, the new growth of lanugo hairs changed more rapidly into dense, properly pigmented ones. Under employment of the drug for months the general condition of the patient was not impaired; indeed, the appetite improved, and he was better nourished. In prurigo (of Hebra) pilocarpine alone had little effect, but this was otherwise when its use was combined with that of woollen clothing, so as to induce free sweating, which was at first manifest only in the sound parts, after a time also in the portions of the body affected with prurigo. Clinical experience agreed with that of the patients themselves when they declared that when, after a few days' use, a material amelioration of their condition declared itself, the itching also continually grew less, in the end entirely to disappear. The other symptoms also underwent improvement, such as the glandular enlargements, the dry and thickened condition of the skin. The average period required to attain this result was sixty-five days. The effect was more rapid when the employment of pilocarpine was combined with that of other remedies found useful in prurigo, as tar, Vleminx solution, glycerine of starch, etc. As to the curative influence of pilocarpine, the disease recurred at longer intervals after its use than after the employment of other measures, and the outbreaks were less severe when they did occur. While not absolutely curative, therefore, it is possible to attain by its use a more favourable result than when purely local treatment is made use of. Whether, if long continued, the disease would be finally worn out remains unsettled. Pilocarpine exerted no influence on psoriasis, though observations were made in 25 cases. In eczema it produced a deleterious influence when employed during the moist stage or too soon after its cessation. It caused a return of the weeping, and even a spread of the eczema to new parts. In chronic cases, however, where there was little more than scaling, itching, and infiltration remaining, the use of pilocarpine caused these to disappear more rapidly than they would have otherwise done. Subcutaneous injections of pilocarpine cured two cases of

pruritus senilis, causing disappearance or lessening of the itching for some hours, thus rendering sleep possible and imparting both physical and mental strength. A case of chronic urticaria which had resisted other remedies yielded to pilocarpine. From what has been said as to its effect on the condition of the skin and growth of the hair, as might be expected, it seemed to hasten recovery from the baldness of alopecia areata, while in ten cases of alopecia pityrodes (seborrhœa) the results were even more favourable.—*Edinburgh Med. Journal*, Nov. 1880.

Medicine.

Case of Combined Measles and Scarlatina.

Dr. De Giovanni records (*Gazetta Medica Italiana*, October 9th) an interesting case of measles and scarlatina occurring synchronously. The patient was a girl aged 10 years, and the symptoms of measles were, on the whole, the predominant ones during the course of the attack. On the third day after measles had been diagnosed, a bright red rash diffused itself over the abdomen and legs, presenting all the appearances of scarlatina. A curious feature in the case was that the upper part of the body was throughout covered with a distinct morbillous rash, while in the lower the rash was that of scarlatina; at the confines of the two eruptions, they were more or less merged in each other. On the eighth day there was paralysis of the bladder, and the urine was for several days albuminous. The patient became convalescent about the twelfth day. The author remarks that the presence of the one exanthem did not in any way appear to affect the course which the other would have pursued had it occurred alone.—*London Medical Record*, Dec. 15th, 1880.

Ear and Eye Disease on Relapsing Fevers.

In a recent epidemic of relapsing fever at Königsberg Dr. Luchhau has investigated the frequency of ear and eye complications. Since no less than three hundred cases were treated in the town hospital, the field for observation was unusually favourable. Only one hundred and eighty cases were specially examined as to the existence of ear complications, and these were found in fifteen only, and in all the middle ear was the part affected. In most cases there was suppuration, and the pus was evacuated through the tympanic membrane. In most cases of disease of the middle ear in acute maladies the inflammation appears to arise by extension from the throat; but it was found that, in relapsing fever, pharyngeal catarrh is absent, as a rule, in the cases in which the middle ear suffers, and there was no evidence of disease of the Eustachian tubes. The prognosis is not unfavourable if prompt treatment is adopted.

Only six cases presented eye symptoms out of the hundred and eighty examined (3½ per cent.) In three there was iritis, which was unilateral in every case. All these cases did well. In one case, however, some weeks later the patient complained of failure of sight, and opacities were discovered in the vitreous. In two other cases optic neuritis occurred. In one the affection was discovered in the first relapse. The second relapse was severe, and some time afterwards there was atrophy of the optic nerves, and vision was reduced to $\frac{1}{10}$. In the other case the neuritis also occurred during the second febrile attack; a few days after it had ceased the swelling of the optic papilla was discovered, dirty-red in colour, with arteries narrowed, and veins distended and somewhat tortuous. Vision was reduced to $\frac{1}{3}$ in one eye and $\frac{1}{2}$ in the other. Another patient came

into the hospital during the first relapse with iritis and hypopion. The ocular trouble healed completely, but after the relapse the patient insisted on leaving the hospital, and passed though the second relapse at home, under very unfavourable conditions. When it was over he returned to the hospital with double iridocyclitis. Numerous thick flakes were seen in the vitreous, the fundus was very indistinct, but the papillæ were seen to be red and swollen, and there were numerous retinal hemorrhages. The account of these cases is published in the October number of Virchow's *Archiv.*—*Lancet*, Dec. 11, 1880.

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Nerve Stretching in Locomotor Ataxy.

Hitherto, little success has attended the employment of the various therapeutic measures designed to arrest the progress or relieve the symptoms of locomotor ataxy. Of all its symptoms, the most urgent in their demand for relief are the darting pains which characterize its early stages, and frequently accompany its entire evolution.

Encouraged by the success which has followed the operation of nerve-stretching for neuralgias of various origins, Langenbeck, more than a year ago, stretched both sciatic nerves, and afterwards both crurals, with the result not only of obtaining complete disappearance of the pains, but also cessation of the motor incoordination. A second case was reported by Esmarch, who stretched the nerves in the axilla for pains in the forearm; and, in this case, too, the motor incoördination disappeared completely. A third case has been published by Erlenmeyer, in which stretching both sciatic nerves failed to influence beneficially either motion or sensation.

A fourth case was shown recently to his class by M. Charcot, at the Salpêtrière, an account of which is published in *Le Progrès Médical* (No. 50). The patient was under the care of M. Debove. He was in an advanced stage of the disease, having been bedridden for eighteen months. The pains were very severe, preventing sleep, situated in the upper as well as the lower extremities; and had required constant injections of morphia, in large doses. The motor incoördination was limited to the lower extremities; the patient could not stand at all. The patellar reflex was absent on both sides; there was extreme myosis, without visual defect, in both eyes. Cutaneous sensibility was deadened; there were no anæsthetic patches. There was loss of the sense of the position of his lower limbs. The left sciatic nerve was selected for operation, on account of the pains being more severe on the left side. It was exposed in the middle third of the posterior aspect of the thigh, and violently and suddenly elongated. The wound was dressed antiseptically. The operation was performed without chloroform, as experiment has shown that pinching a nerve violently causes momentary arrest of the circulation and respiration; and it was feared that this arrest might be dangerous to a patient under chloroform. However, the patient did not suffer much pain, owing to the extent to which he was saturated with morphia. The results were very remarkable. The darting pains had ceased completely, and the motor incoördination had nearly disappeared; but the tendon reflexes and the myosis remained unaltered. The patient could touch M. Charcot's hand with either foot when held a couple of feet above his bed; and, when assisted, could stand upright, and even walk a few paces.

M. Charcot remarked that we do not know how this operation effects this result; but this matters little. The point of importance is, that nerve-stretching appears likely to be an operation of much service to the unfortunate sufferers from ataxy.—*British Med. Journal*, Dec. 25, 1880.

Spinal Paralysis in the Newly-Born.

In the *Archiv für Gynäkologie*, Bd. xvi. s. 87, LITZMANN makes a contribution to our knowledge of this subject. He appends his observations to an account of a case observed by him in Kiel. The presentation was breech. The pelvis was not particularly small, the diagonal conjugate measuring $4\frac{3}{16}$ inches, leading to an assumed conjugate of $3\frac{1}{2}$, the type being justo-minor. The extraction of the body required to be hurried on account of absence of pain and arrest of the circulation in the cord while the body of the child was passing through the pelvis. The child, on being delivered, was deeply asphyxiated. The delivery required no great amount of force to be exerted upon the spine. The asphyxiated child was quickly brought round, and cried loudly. It cried a great deal in the course of the forenoon, and was very restless. Inspirations were irregular and crampy. In the afternoon both legs were completely paralyzed, sensation and reflex sensibility were arrested; the belly muscles were also more loose than usual, and the belly distended. Other symptoms of paralysis were detected. The child shortly improved somewhat, however; but in spite of care and prolonged application of electricity, direct and indirect, there remained considerable permanent paralysis. After a review of the literature of the subject, in which special attention is directed to the work of Little, the author maintains that during severe deliveries which are accompanied with deep asphyxiation of the child, extravasations frequently take place into the meninges of the brain and into the brain tissue, as also into the membranes of the cord, during the delivery, which present themselves in the early years of life as paralyses more or less severe in character. He insists upon greater attention to cases of the kind, and considers that those extravasations may take place quite independently of any force used at delivery.—*Edinburgh Med. Journal*, November, 1880.

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Some Points in the Clinical History of Effusion into the Pleural Cavity.

At a late meeting of the Medical Society of London (*Lancet*, Dec. 11, 1880), Dr. BROADBENT read an interesting paper on this subject, of which the following is an abstract. He first enumerated and explained the relative importance of the physical signs of pleural effusion, and pointed out that the curved line of dulness was due to the manner in which the lung shrinks around its root, and as the fluid rises the vocal resonance and vibration become exaggerated over that part of the chest-wall where the lung is still in contact. When the cavity is full of fluid the respiratory murmur may be conducted for a short distance across the back from the unaffected lung. Sometimes, however, the lung was prevented from collapsing by adhesions, by consolidation, or congestion: and he believed the persistence of bronchial breathing in such cases was due to imperfect collapse of lung, although the fluid was in large amount.

The chief point he wished to urge was that while the ordinary signs of effusion into the pleural cavity—dulness, extinction of vocal fremitus, diminution of vocal resonance, and limitation of bronchial breathing to the region of the root of the lung—show that the lung retreats and shrinks before the fluid, loud tubular breath sounds at the base of the lung posteriorly and over the lateral and anterior aspect of the chest show that the lung has not entirely retreated, but that it retains a certain volume, and is more or less deeply immersed in the fluid. The patency of the bronchi and the partial condensation of the lung favour the transmission of sonorous vibrations. It is in these circumstances that ægophony is heard most distinctly and widely—from the thin layer of fluid intercepting some vibrations and transmitting others—conditions which ordinarily exist only in the earlier

stages of effusion. In some of these cases there may occur some degree of vocal vibration at a period when the amount of fluid is sufficient to give dulness on percussion over the entire lung. Paracentesis would be of comparatively little value in such conditions, for the quantity of fluid is small, and the consolidation of the lung would persist after its removal; and most cases of this sort get well without resort to paracentesis. In one such case only thirty ounces of fluid could be withdrawn. The conditions are met with in the pleural effusion of renal disease, often accompanied by congestion, and partial consolidation of the lung preventing its collapse; also, in effusions which rapidly become purulent, as in empyema in children. Apart from these cases, the signs indicative of a large congested lung deeply immersed in the fluid are prognostic of rapid absorption, and Dr. Broadbent had seen this now in a sufficient number of instances to enable him to predict with considerable confidence the recovery of the patient without paracentesis and in a comparatively short time. One of the first steps towards recovery is a rather sudden disappearance of the tubular breathing and the substitution of the more ordinary signs of simple effusion; and it is probable that the congested lung has relieved itself by diffusion of serum into the pleural cavity, and that the amount of fluid there is actually increased.

In conclusion, Dr. Broadbent stated the rules which guide him in recommending paracentesis. It should be resorted to at once when there is serious continued or paroxysmal dyspnœa; but in the absence of urgent symptoms a week or ten days may be given after one side of the chest is full, on the chance that absorption may set in, and a longer period still, when the lung has not greatly shrunk. Old age, phthisis, or a phthisical tendency, are reasons for early tapping, as also is the existence of disease of the kidneys. The spot for puncture is the eighth space, in a line with the angle of the scapula, and he had come to prefer the common trocar and canula, with antiseptic precautions, to the aspirator. The whole of the fluid should never be removed, or attempted to be. Where the effusion has lasted some time, frequent partial emptyings are to be preferred.

Dr. C. T. Williams referred to a case of pleural effusion with presence of marked bronchial breathing and vocal vibration, and alluded to the valuable aid in diagnosis rendered by the use of a hypodermic syringe.

Dr. De Haviland Hall mentioned a case of sarcomatous growth filling the pleural sac and collapse of lung, yet with presence of vocal fremitus. In one case he had withdrawn 107 ounces of fluid, and he asked the author as to the amount he would recommend to be withdrawn.

Dr. Habershon spoke of the various forms of pleural effusion—*e. g.*, in renal and in cardiac disease, secondary to pneumonia or due to primary pleuritis. He recalled a case of Dr. Addison's where a small area of bronchial breathing existed, surrounded by complete dulness and absent breath-sounds. The autopsy revealed a portion of lung adherent to the chest-wall at that spot. He pointed out that many cases recover if left alone. If there were high temperature, hectic fever, and tendency to tubercular disease, and if dyspnœa were present, he would advise paracentesis, especially if empyema were suspected.

Dr. Hare said the physical signs were often misleading, especially in children; the presence of vocal fremitus and respiratory murmur on the affected side was only to be accounted for by conduction from the healthy side, through the compressed lung and fluid.

Dr. Wharry asked how far vocal fremitus and tubular breathing were indications of the existence of uncollapsed lung in the fluid. He had seen at least one such case where these signs were absent. What were the author's reasons for assuming that exudation took place from the lung into the pleura in certain cases?

Dr. GILBART SMITH agreed with Dr. Hare as to the difficulty of diagnosis in children. He instanced a case where the lung was wholly collapsed, notwithstanding presence of fremitus and tubular breathings, and asked whether a purulent effusion did not conduct vibrations better than a serous one. He also asked whether the disappearance of these signs would not be better explained by an increase in the effusion and pressure on the lung than by an exudation from the lung itself.

Dr. BROADBENT, in reply, said he had not seen cases of vocal vibration and bronchial breathing with collapsed lung, nor could he explain such. The persistence of vesicular breathing implied the existence of a non-collapsed lung. He did not consider that increase of pressure explained the disappearance of bronchial breathing, for almost invariably improvement quickly followed—ushered in by returning apical resonance. He had not practised injections into the chest in serous effusions, but had frequently and with benefit employed solutions of iodine in cases of empyema. He now preferred to use the simple trocar inserted near the angle of the scapula; this allowed of the withdrawal of the right amount of fluid, while the entrance of air did no harm. If the aspirator were used it was his practice to stop as soon as the patient became distressed or attacked with cough. Eighty-four ounces was the largest amount he had ever drawn off.

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Sudden Death in Pleuritic Affections.

Dr. LEICHTENSTERN (*Deutsches Archiv für Klin. Medicin.*, Band iv. 4 Heft) discusses a number of cases recorded in medical literature of pleuritic patients, in whom severe syncope and sudden death have occurred, with the view of explaining the causes; and he arrives at the following conclusions. Sudden death or severe attacks of syncope in cases of pleuritic effusion have sometimes their origin in embola of the pulmonary arteries. In other cases, no pulmonary embola exist, but voluminous and far-extending thrombi in the right auricle and ventricle, and in the superior vena cava. The generally prevailing view that left-sided effusion has a greater effect in disturbing the circulation than effusion on the right side, is incorrect. On the contrary, extensive exudation on the right side causes greater disturbance of the circulation by pressure on the large vessels, and on the right auricle and ventricle than does considerable effusion on the left side. And the opinion that cases of sudden death and severe syncope are more frequent in left than in right exudations, is contradicted by statistics. Of fifty-two cases, in thirty-one the exudation was on the right side, and in twenty-one on the left. Cases of sudden death, apoplectic attacks in pleuritic effusion, sometimes arise from embolism of an artery of the brain, or its consequences. In a great number of sudden deaths with pleuritic exudation, we are not yet in a position to explain the cause. The fatty degeneration of the muscles of the heart, the anæmia of the brain, and the œdema of the lung do not suffice for an explanation. To anæmia of the brain as a cause, those cases only can be assigned in which the raising of the sick person from the horizontal position has been followed by severe syncope ending in death. Various causes which sometimes quite interrupt or impede the flow of blood to the left heart, such as a severe paroxysm of coughing, vomiting, lifting heavy burdens, may give rise to a suddenly fatal anæmia of the left heart, and secondarily of the brain. The anæmia of the lungs or brain found in many cases is only of secondary importance. It frequently happens after thoracentesis with aspiration that an anæmia is induced in the partially distended lung; and this may lead to death by asphyxia. In sudden death, during or immediately or a short time after thoracentesis by aspiration, the cause is anæmia either of the heart or of the brain.

In cases in which severe syncope and sudden death are observed during the irrigation of the pleural cavity, the cause is either direct mechanical concussion of the easily exhausted heart by the stream of water thrown in, or shock. The washing out of large empyemic cavities with strong solutions of carbolic acid may cause severe collapse, and perhaps death, due to the rapid absorption of large quantities of the acid.—*London Medical Record*, Dec. 15, 1880.

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Retarded Signs in Pneumonia.

Dr. TYSON (of Folkestone), at a recent meeting of the Clinical Society of London (*Lancet*, Dec. 18, 1880), read notes of cases of acute pneumonia, in which the usual physical signs of the disease appeared late in the case.—Case 1. A man, aged sixty-four, caught cold whilst driving on April 4, 1880, and next day was compelled to give up work. He was seen for the first time on the 8th, when he complained of pain in the chest, and expectorated some tenacious mucus. There were no abnormal physical signs. Temperature 103; pulse 88; respiration 30; urine albuminous. On the 11th slight dulness appeared at the base of the left lung; fever was high. On the 12th (eight days after the chill) there was well-marked dulness, bronchial breathing, and bronchophony. He was very feeble, and died on the 15th.—Case 2. A female, aged twenty-five, in Guy's Hospital under the care of Dr. Pye-Smith, taken ill three days before admission, when the temperature was 104°. Signs of pneumonic consolidation appeared on the sixth day, and death took place on the seventh. There was gray hepatization of the right upper lobe. — Case 3. A male aged fifty, in whom no dulness was discovered till the sixth day. Death occurred on the tenth day. In two other cases Mr. Tyson had marked the absence of physical signs until the fifth day. He referred to the statement made by Dr. Bowles, that in asthmatical subjects attacked with pneumonia dulness often did not develop till four or five days after the seizure. After quoting passages from Ziemssen's Cyclopædia and Trousseau's lectures to show that such a late development of physical signs was not generally acknowledged, he concluded by stating that this retardation of signs occurred more frequently than was generally supposed, and might be attributed to the central parts of the lung being primarily affected. In such cases the onset of the attack, the pyrexia, and the altered pulse-respiration ratio should be relied on as diagnostic points.

Dr. F. TAYLOR confirmed the author's statement as to the relative frequency with which the physical signs appeared late in the disease, and quoted a case which came to the out-patient department with a history pointing to pneumonia. The physical signs were not apparent, although it was about the fourth day; but the patient coughed up some rusty sputa and was admitted. Soon afterwards physical signs became developed. In another case the delayed signs appeared before the rusty expectoration.

Dr. ANDREW CLARK said the paper was an important contribution to the literature of the subject, for anomalous and capricious cases of pneumonia were imperfectly recorded; but he did not think it added much to the knowledge of experienced men. He was constantly meeting with cases in which the constitutional evidence of pneumonia long preceded the appearance of local signs. He would mention three such cases. One was a case of a gentleman he saw in consulation with Dr. Stephen. After a slight rigor the temperature rose to 101°, and for seven days there was no evidence of the disease, except the general distress, rapid breathing, and altered pulse-respiration ratio. The physical signs of pneumonia appeared on the eighth day. Another case was that of a gentleman, aged eighty, at Southsea, seen with Mr. Potts and Sir W. Gull. After a chill

there was a period of ten days marked by irregular pyrexia, malaise, and hurried breathing. On the eleventh and twelfth day slight friction was heard below the angle of the right scapula, followed by dulness and tubular breathing. The patient recovered. A third case was one he saw with Dr. Buzzard, when the patient had been ill for six days with pyrexia without the local signs. He did not think it necessary to have all the physical signs present to diagnose pneumonia; and that in cases of central pneumonia the disease was too far removed from the surface to yield these signs. With a history of chill, with distress and prostration, with fever, and a disturbed relation between pulse and respiration, one may be absolutely certain that the case is one of pneumonia.

Dr. HABERSHON concurred that in some cases the general symptoms, with hurried breathing and rusty expectoration, without physical signs, must be taken as sufficient for diagnosis. No doubt such anomalies were explained by the disease being deep-seated, so that the physical signs are obscured, just as a severe pleurisy may involve the surface of the diaphragm without any friction being audible. When the physical signs do become manifest, the pneumonia has probably extended to the periphery.

Dr. ANDREW CLARK added that pneumonia might be diagnosed from the general conditions; because in a large number of cases there is neither cough, nor expectoration, nor pain in the side.

Dr. DE H. HALL, some five or six years ago, had recorded two cases of apical pneumonia marked by severe head symptoms. One was a man, aged nineteen, who was comatose for six hours; the other a child, who had repeated convulsions; and it was only on the fifth or sixth day that distinct tubular breathing appeared. One reason for the severity of these cases, as compared with those which ran a more typical course, might be found in the greater amount of lung involved in central than in peripheral pneumonia.

Dr. BURNEY YEO said that such cases suggested the question whether the lung condition was not secondary to a constitutional disorder.

Dr. GOODHART observed that the question was a complicated one, so many conditions occurring under which the physical signs varied. In old people the late appearance of these signs was attributable to the presence of emphysema. At the same time he agreed with Dr. Yeo that blood-poisoning might be the primary condition to which the pneumonia was secondary. Some years ago he examined the body of an old man, who died three or four days after taking a chill. There was only a slight amount of pneumonia, and the only interpretation he could put on the case was that the chill, arresting the function of the skin, had caused blood-poisoning, and that sufficient time had not elapsed for true pneumonia to be fully developed.

Mr. TYSON replied, that all his cases ultimately developed the signs of ordinary pneumonia. The last case he had seen was in a child, five years of age, with high temperature for six days, without pneumonic symptoms. He had written the paper because all the authorities he had consulted did not mention the proportion of cases in which this delay in the development of physical rigors occurs; although many state that they have seen such cases.

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The Production of Phthisis by Inhalation.

In 1877 Dr. TAPPEINER[1] published an important series of observations on the production of tubercular disease in the dog by the inhalation of the sputa of persons suffering from phthisis. He has lately extended his investigation by an

[1] See Monthly Abstract, 1878, p. 252, and 1879, p. 15.

attempt to ascertain whether the inhalation of material from scrofulous glands is capable of producing the same effect, and the results have been published in Virchow's *Archiv*. If scrofulous diseases are indeed identical with tubercular processes, as it is fashionable now to assert, the effect of inhalation of gland-pus ought to be the same as that of phthisical pus. The material for the experiments was pus from a scrofulous boy, five years of age, with suppurating glands. Half a gramme of pus was obtained daily, mixed with 100 grammes of water, and the dogs were made to inhale the atomized mixture for a quarter of an hour during about ten days. For purposes of comparison, two dogs were similarly treated with phthisical sputa. These two, and one of the dogs treated with the gland-pus, were killed and examined twenty-three days later. The organs of the latter were found to be perfectly normal, although the animal had presented a cough and loss of weight. In the two dogs treated with phthisical sputa, tubercular nodules were found in both lungs and spleen; their nature, from the microscopical characters, was beyond doubt. The two other dogs treated with gland-pus were killed and examined thirty-three days after the commencement of the inhalation, and the organs were also found free from tubercle. The same negative result was obtained in the case of two dogs killed on the twenty-ninth day after the inhalation of gland-pus.

Further investigations were made as to the period of incubation from the commencement of the inhalation of phthisical sputa until the tubercles are distinct in the lungs. One dog was killed on the thirteenth day after the commencement of the inhalation; it had coughed for eight days, and had lost three-quarters of a pound in weight; no tubercle was found in the organs. In another dog, killed on the nineteenth day, also, no tubercle was found. It thus appears that the period of incubation is more than nineteen days. Another dog, treated at the same time and in the same way with phthisical sputa, was killed three months after the commencement of the inhalation, and abundant tubercles were found in the lungs and pleuræ.

By the suggestion of Professor Waldenburg, two other dogs were treated with sputa from simple chronic bronchitis, fifteen grammes daily for ten days; and they were killed on the twenty-eighth day after the commencement of the inhalation. The post-mortem examination showed both lungs to be perfectly normal, without a trace of tubercle. The experiments were made at Berlin, and the pathological results ascertained by Grawitz, Israel, and Friedlander, under the supervision of Virchow, so that the facts appear to be beyond question.

The conclusions drawn by Tappeiner from these experiments are: (1) The inhalation of phthisical sputa by dogs, even in small quantities, produces with certainty tuberculosis of the lungs, with or without general tuberculosis, especially of the spleen. (2) The stage of incubation is, in dogs, longer than nineteen days, but shorter than twenty-three days. (3) The inhalation of scrofulous caseous pus from glands produces no infection—a fact which indicates an essential difference between scrofulosis and tuberculosis. (4) The inhalation of the sputa from chronic bronchitis is equally ineffective.

The facts ascertained in these experiments are certainly of a very important nature. The period of incubation, however, can hardly be fixed from so small a number of experiments, since it may not improbably be subject to considerable variation. But these observations constitute experimental confirmation of the infection of phthisis, to which many clinical facts point, and they indicate the probable mode by which the infection is produced. The difference in the effect of scrofulous pus and phthisical sputa, if not entirely conclusive as to the difference between tubercular and scrofulous affections, indicates that we must still pause before we abandon the older view. That view rests, we must remember,

on clinical facts, which were so well described long ago by Sir William Jenner; and these facts must be explained away if we are to accept, as Dr. Hilton Fagge would have the members of the Pathological Society accept, the results of inoculation experiments as conclusive evidence of the identity of the two conditions.—*Lancet*, Nov. 27, 1880.

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Case of Gonorrhœal Endocarditis.

Dr. CIANCIOSI records a case of this rare complication in *Bulletino delle Scienze Mediche*, September, 1880. The patient, whose family history was good, contracted a gonorrhœa, which was checked almost immediately by strong astringent injection. The disappearance of the discharge was, however, quickly followed by an undefined feeling of malaise, which became aggravated, and finally accompanied by intense cephalalgia and pyrexia. Auscultation showed at this period a systolic murmur most distinctly heard at the apex. Respiration, 28; temperature, 39° centigrade (102.2° Fahr.). The diagnosis of endocarditis was arrived at, of which no other explanation seemed possible than that it was dependent on the suppression of the gonorrhœal discharge. This shortly afterwards became re-established, and the patient eventually recovered. The author, in explaining the etiology of the attack, exhausts various hypotheses, but eventually adopts that suggested by Klebs in certain cases of rheumatism, viz., an actual emigration of micro-organisms. In this case such organisms found their way into the blood, whence they may have been deposited on the valves of the heart, or in its stroma, with the result of exciting interstitial inflammation, accompanied by the usual train of symptoms.—*London Medical Record*, Dec. 15th, 1880.

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Two Cases of Intestinal Occlusion Treated and Cured by Electricity.

BOUDET de Paris (*Progrès Médical*, August, 1880) gives two cases of intestinal obstruction successfully treated by electricity. In the first, the patient, aged 15, had just recovered from an attack of peritonitis, when she was suddenly seized with all the symptoms of obstruction, due probably to the entanglement of a loop among the freshly formed adhesions. The usual means having failed to give relief, the faradic current persistently applied externally was tried, but without any result. The patient was in a very critical condition, bringing up everything that was given her by the stomach. During the next forty hours the continuous current was applied about every three hours for half to one hour at a time; the negative pole was in the rectum, and with the positive the abdominal walls were dabbed so as to produce interruptions. During these applications the intestines were noticed to be the seat of lively muscular contractions, and eventually desire of going to stool was experienced. At last an evacuation was obtained, and from this moment convalescence was established. In the second case, the author had to do with fecal accumulation due to habitual constipation from deficiency of muscular power. Electricity, in the shape of internal galvanization as above, and abdominal faradization, was resorted to as a last resource. The result was most gratifying. From the first, intestinal contractions were obtained, and on repetition large quantities of excreta were expelled The author remarks that he has collected fourteen other cases where electricity has proved useful in obstruction. He shows that the superiority of the galvanic current, where paralysis of the intestine exists, is due to the fact that it stimulates much more powerfully the unstriated muscular fibres. The interruptions must be slow, because the contractions of these fibres are not sudden but gradual. Care must be taken not to electrolyze the rectum by using a moderate current. The author used from 8 to 14 Leclanché's.—*London Med. Record*, Oct. 15, 1880.

Double Cystic Kidney with Renal Calculi.

Dr. L. A. Aman and Axel Key relate the following case (*Hygeia*, 1879: and *Nordiskt Medicin. Arkiv*, Band xii.). The patient, a man aged 37, had first voided a renal calculus in 1871, and another in the autumn of 1872. Since that time his health had been good; but sometimes he had a feeling of weight in the loins and discharged a little gravel. On July 1, 1879, he took cold, and soon noticed that the daily quantity of urine diminished until the 8th, when there was suppression. He was admitted on July 9th, into the hospital at Linkoping: his bladder was then empty. In the course of the next night, he voided about seven ounces of urine with his stools. He complained only of soreness in the region of the right kidney. The urine could not be examined until the 15th, when it was found to contain much albumen. On that day, symptoms of uræmia set in, and he died on the 16th. At the necropsy the mucous membranes were found to be œdematous, and the brain hyperæmic. The kidneys were sent to Dr. Axel Key for examination. They were both greatly enlarged, the left, however, more than the right; and both presented almost complete cystic change. The renal parenchyma remaining in the interspaces between the cysts had a yellow-gray turbid appearance. The pelvis of the right kidney was much dilated, and contained a large nodulated calculus, the lower part of which was rounded, and covered in the orifice of the ureter, which was dilated. The left ureter, at a distance of about two inches from the kidney, was completely blocked up by a calculus of moderate size; below this, the canal was completely strictured by indurated connective tissue, scarcely allowing the passage of a fine sound. Above the stone, the ureter was dilated, and the pelvis and calyces especially were greatly expanded. Dr. Key thinks it remarkable to find such extensive changes in the kidneys of a person who had enjoyed relatively good health up to a fortnight before his death. He regards the cystic change as having been principally congenital, and as having no connection with the formation of the renal calculi and the consequent obstruction to the flow of urine. The renal parenchyma which was found between the cysts had been sufficient for the function of the kidneys. When the renal concretions began to be formed, hydronephrosis was gradually developed, and in connection with it a chronic nephritis with interstitial and parenchymatous changes, which went on for a time without producing any marked disturbance, until at last an acute exacerbation set in and rapidly caused death.—*Brit. Med. Journ.* Oct. 30, 1880.

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Sciatica caused by Aneurism of the Abdominal Aorta.

In this case, reported by Garel (*L'Union Médicale*, p. 951), the pains of sciatic neuralgia absorbed the attention both of patient and medical men so entirely, as to leave absolutely unnoted symptoms of aneurism until the day when the patient succumbed rapidly after its rupture. This fact teaches that, in the presence of obstinate sciatic neuralgia, the course of the abdominal aorta should always be minutely explored. Lebert, in a work published in 1865, asserts that pain in the kidneys is often one of the first signs of aneurisms of the abdominal aorta. [See particulars of a similar case shown by Dreyfus to the *Société Anatomique de Paris*, in 1876; other cases cited by Samuel Archer, in the *Dublin Medical Journal*, 1878; and Lediard, in the *British Medical Journal*, 1878.] M. Garel's case also presented an important symptom, a diastolic souffle at the base of the heart, which was not due to insufficiency of the aorta, since the other rational symptoms of this affection were absent. It remains an ascertained fact that aneurism of the abdominal aorta may give rise to the production of souffles in the region of the heart—diastolic or systolic souffles in no way connected with

a lesion of the aortic orifice. Moutard-Martin's cases (*Société Anatomique*, 1845), those of Lepine and Falzer (*Société Anatomique*, 1877), and of Archer (*loc. cit.*) show that these souffles are due to the propagation of sounds produced at the level of the tumour.—*Lond. Med. Record*, Oct. 15, 1880.

Surgery.

Carbolic Acid in Facial Erysipelas.

Dr. ROTHE observes (*Betz. Memorabilien*, 1880, No. 9), that, however efficacious the subcutaneous injection of carbolic acid proves in arresting the course of erysipelas, it is not suitable when the face is the part attacked, for not only does it give rise to considerable pain, but induces a swollen and painful condition of the periphery. For some years past he has been in the habit of using the following application: Acid. carbolic., sp. vini., āā one part; ol. terebinth. two parts; tinct. iod. one part; glycerin. five parts: pencilling the inflamed skin and its vicinity with it every two hours. No pain or sense of burning is produced, and the skin is usually next day pale and wrinkled. The further progress of the disease is more effectually arrested than by any other remedy, any new patches being rapidly effaced, so that in three or four days the facial erysipelas is usually at an end. The pencilled places should be covered by a very thin layer of wadding. When febrile action is present the ordinary internal measures must also be resorted to.—*Med. Times and Gazette*, Dec. 4, 1880.

Peritomy.

At a late meeting of the Ophthalmological Society of the United Kingdom (*Lancet*, Dec. 18, 1880), Mr CRITCHETT read a paper on Peritomy, and gave the following reasons for introducing the subject to the notice of the meeting: First, that during a long career many cases of vascular opacity with granular lids had come before him in which the disease had remained for many years unrelieved, although the patients had been under treatment for considerable periods at various institutions; and secondly, because the operation of peritomy had fallen into unmerited neglect, and was seldom practised. He then proceeded to give a brief sketch of the leading symptoms of the disease, and alluded to the type of patient in whom it most frequently occurs, he having found that it is most prevalent in young adults who had been ill-nourished and neglected; and that it is frequently propagated by direct transmission, so that constitutional defects and local causes contribute in varying degrees to its development. It often exists in a more or less aggravated degree for many years; and the treatment is, as a rule, directed to removing the granular condition of the lids. This may be partially effected by the application of caustic and astringent lotions, but such treatment is rather palliative than curative, and not unfrequently during its progress the case will relapse and the symptoms become even more intensified.

Mr. Critchett recommended—although it might seem contrary to the pathology of the disease—that curative treatment should in the first place be directed to the vascular web, which in these cases covers the upper third or upper half of the cornea, since he believed that the exciting cause of the relapses lay rather in this morbid condition, and that the granular state of the lids was kept in activity by the existence of the above-mentioned vascular membrane. He,

therefore, in every case initiates his treatment by performing the operation of peritomy, since he finds that when sufficient time has been allowed (usually from four to six months) for the resulting cicatrix to become dense, white, and atrophied, thus cutting off the vascular supply to the partial pannus, the web gradually disappears, the cornea becomes transparent, and the granulations either take their departure or become much more amenable to ordinary treatment. He was anxious to dwell upon this last point, because for a certain period after the performance of the operation no benefit, but rather the contrary, would usually be observed, and it is only on the completion of the last atrophic stage of the cicatrix that the curative influence is established. He earnestly commended the operation to the attention of his colleagues. Three cases were shown illustrating the effects of treatment at different stages. Mr. Critchett said that he extended the peritomy beyond the pannus—*i. e.*, right round the eye.

Mr. HIGGENS has performed peritomy in many cases without result, and had therefore abandoned it. Possibly he had not observed the case long enough afterwards, and after Mr. Critchett's advocacy he would again perform the operation.

Mr. STREATFEILD asked whether any treatment was adopted for the granular lids?

Mr. CRITCHETT said all the cases had granular lids, but he began by the peritomy, and in a large number of cases the granular condition subsides when the vascularity of the pannus is cured. In other cases the granular lids require additional treatment.

Mr. JAMES ADAMS had long been in the habit of performing peritomy, and was satisfied with the benefit resulting from it. He thought the cases should be selected. He had found that the pannus was not always dependent on granular lids, but the cornea was vascular from the first.

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Case of Hemiglossitis.

An example of this affection (which, like all similar cases on record, occupies the left side) has been recently treated in the Lariboisière. An œdematous swelling occupied the anterior two-thirds of the left side of the tongue, and a deep-seated lump was sensible to palpation. All the neighbouring parts of the mouth and the teeth were in good condition, there being only present a little redness in the pharnyx and a painful swelling of the submaxillary glands. The functional disturbances consisted in difficulty of speech, nasal intonation, fetid breath, and abundant salivation. It is remarkable that there was no pain in the part, the face or the neck. The exact localization of the disease became more and more obvious in its progress, and while the side affected was divested of its epithelium and appeared of an intense red, the right side retained its natural aspect, its whitish colour contrasting strongly with the other half of the tongue. Under the use of emollient gargles and the chlorate of potash internally, the disease was cured in eight or ten days.—*Med. Times and Gaz.*, Dec. 11, 1880, from *Gaz. des Hôpitaux*, Nov. 27, 1880.

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Anæsthesia of the Larynx by a New Method.

Dr. ROSSBACH (*Wiener Med. Presse*, No. 40, 1880), being dissatisfied with the ordinary method of producing local laryngeal anæsthesia by the administration of bromide of sodium, on account of the greater difficulty in operating when the patient is listless and drowsy under the influence of that drug, has of late followed another method, which he finds perfectly practicable and more convenient.

His object is to influence the sensory portion of the laryngeal nerves, so as to interrupt conduction through them for a time, and thus induce complete anæsthesia of the larynx. The sensory portion of the superior laryngeal nerve is most easily reached at the point at which it passes through the thyro-hyoid membrane into the interior of the larynx, immediately below the extremity of the greater horn of the hyoid bone; here it is so superficial that a subcutaneous injection of about $\frac{1}{12}$ grain of morphia on each side, at the spot indicated, will produce full local anæsthesia. A simpler method of obtaining the same result is to direct the ether spray from a Richardson's apparatus on the above described points, which can be done on both sides simutaneously, with a double pointed nozzle; in one to two minutes complete anæsthesia is established.—*Glasgow Med. Journal*, Dec. 1880.

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Thyrotomy in a Child aged Eighteen Months.

The subject of intra-laryngeal new growths is one of sufficient interest, on account of the intrinsic difficulties of diagnosis as well as treatment, to make all contributions concerning it both welcome and instructive. Dr. NAVRATIL, of Pesth, contributes an interesting paper to the *Berliner Klinische Wochenschrift*, No. 42. After some preliminary remarks concerning some former communications on the same subject, he relates the following case: A male child, who appeared from the history to have been hoarse from its birth, when eight months old got whooping-cough; after the cough had subsided, the hoarseness became more marked. A peculiarity in the voice, and a noisy, laboured respiration, had been noticed, and in the course of the last two months, especially at night, the child had suffered from occasional attacks of dyspnœa. Treatment, which had been of an "anti-catarrhal" kind, had proved quite unavailing. In consequence of this failure, but especially because an extensive ulceration had broken out on the scars of the previously healed vaccination places, a possible syphilitic origin for the dyspnœa was taken into consideration, and anti-syphilitic remedies were accordingly ordered. They proved, however, quite unavailing. Meanwhile, the dyspnœic attacks increased in severity to such an extent that the parents sanctioned a more radical method of treatment. At this time the child was exceedingly emaciated; it presented no signs of syphilis, but it was cyanosed and its breathing was hard and laboured. Tracheotomy was now performed; and although the operation barely lasted two minutes and a half, respiration ceased. After the subcutaneous injection of ether, and other means had been tried, the child gradually revived. Contrary to Dr. Navratil's usual custom, and led thereto chiefly by the child's exhaustion, further operative means (the extirpation of the growth) were not undertaken at this time. Not until four weeks later was the general condition sufficiently improved to warrant any further attempts. A vertical incision was then made over the middle of the thyroid cartilage, which was thus laid open. But between the lower extremity of this incision and the tracheotomy wound, a narrow bridge of tissue was left untouched. The object of this was to secure a more exact adaptation of the edges of the wound and of the vocal cords, and for the better holding in place of the canula when sewing up after completion of the operation. Instead of finding the papilloma, the operator found a cavity lined with mucous membrane, in the form of a shut sac; he therefore passed a bent probe upwards from the canula into the larynx, and in this manner established that the mucous sac (above mentioned) was not the larynx. The sac was then slit up, and the papilloma discovered. It was as large as a medium-sized strawberry, and almost filed the laryngeal cavity. The growth was removed with the hæmostatic forceps, and the place from which it had sprung was then touched with the galvano-caustic; for, owing to the small size of the

larynx, even when widely expanded with sharp hooks, it was found impossible to cut off the mucous membrane itself, which seems to be the best prophylactic against recurrence. The edges of the thyroid cartilage were then brought together (a proceeding which was greatly facilitated by the little bridge of tissue already mentioned), and the wound was covered with carbolic gauze. It may be remarked that there was very little hemorrhage, and that there was not the slightest need to plug the trachea. The after-proceedings were not altogether untroubled, for the edges of the wound separated and became very unhealthy, and there was fever for several consecutive days. On the sixth day (after the operation) fluids came out of the tracheal wound: this was considered as probably due to injury to the posterior wall of the larynx and the adjoining wall of the œsophagus by the cautery. But after two weeks this ceased. The child now began to grow and develop in a remarkable way. Its voice—on stopping the canula—was clear; it could whistle and breathe through the mouth, though only for a short time. The growth, however, began to recur after a period of ten weeks. A metal probe was coated with nitrate of silver, and this was applied twice weekly. The new growth rapidly disappeared under this treatment (but whether permanently or not is not stated). The recurrent growth was much firmer than the original one; and Dr. Navratil considered this a good omen. A similar appearance has been observed in other cases. As a rule, the softer the growth—presumably from greater abundance of the cellular element—the more probable its recurrence after extirpation, and the greater the necessity for excising the basement membrane on which it rests, with a view to prevent this recurrence. This form of growth is very unusual in children. Thus this author had only seen three other cases, aged three and a half, five, and seven years respectively. The case may be regarded almost as unique in so young an infant as the present instance.—*Med. Times and Gazette*, Dec. 25, 1880.

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Œsophagism.

Dr. ELOY concludes (in the *Gaz. Hebdomadaire*, December 10) an elaborate paper on œsophagism in these terms: "As a result of the consideration of all the cases which we have cited, we come to the conclusion that the most efficacious means for combating this affection, when existing independently of all functional disturbance—that is, œsophagism from a nervous cause, whether local or general—are the employment of catheterism (with or without dilatation) as a mechanical agent, the hypodermic injection of morphia as an analgesic, and the bromide of potassium (either by the mouth or as an enema) as a moderator of the reflex power. Moreover, this last agent will facilitate catheterism, by imparting a greater toleration of the mucous membrane to the contact of instruments."—*Med. Times and Gaz.*, Dec. 18, 1880.

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Extirpation of a large Retro-peritoneal Fibroma, and of the left Kidney and Supra-renal body which were adherent to it.

Dr. F. B. BUSCHMANN reports this case. The operator was Professor Billroth. The patient was aged thirty-five. The belly was distended; no distinct masses could be felt; palpation gave a feeling of firmness and elasticity, but no distinct fluctuation; the percussion dulness passed without interruption into that of the liver and spleen. The tumour seemed fixed, and no connection could be made out between it and the uterus, which was apparently normal. The size and weight of the tumour caused much suffering, and there had latterly been rapid wasting. There was some bronchial catarrh, but with this exception the other organs were normal. The incision made was twenty centimetres long.

The tumour, which felt as if it contained fluid, was punctured, but nothing came. As the size of the tumour therefore could not be lessened, the incision was prolonged ten centimetres. The tumour was then separated from the surrounding peritoneum by numerous ligatures. The left kidney and supra-renal body, which were quite healthy, were lying in the true pelvis, and were firmly adherent to the tumour, attempts to separate them producing great hemorrhage. The vessels in the hilum of the kidney and the ureter were therefore tied, and it and the supra-renal body removed with the tumour, which weighed eighteen kilogrammes (about 39¾ lbs.). The growth was not pediculated; it had sprung from between the folds of the broad ligament, and grown upwards behind the mesentery. The uterus and both ovaries were normal, and not connected with the tumour. The wound was closed with twenty-nine sutures, and four drainage-tubes put in. Every antiseptic precaution was observed. Symptoms of peritonitis appeared next day, and the patient died in collapse on the fifth day. There was no autopsy. The tumour was found to be a fibro-myoma.—*Obstetrical Journal of Great Britain*, Nov. 15, 1880.

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Accident to a Lithotrite.

At a recent meeting of the Medical Society of London, Mr. COULSON read notes of a case of lithotrity (Bigelow's operation), in which an accident of an unrecorded kind occurred to the lithotrite. The patient was sixty-eight years of age and had suffered from symptoms of calculus for about seven years. The operation was performed on the 11th inst. The meatus urethræ having been previously incised, a large stone about two inches in diameter was caught and crushed with Bigelow's lithotrite. The stone offered much resistance to the instrument, and the fragments separated with a loud crack. Three or four fragments had been successively crushed when it was found that the screw and two pins by which the lithotrite is fastened to the shaft had given way, so that the two portions of the instrument became separated. No means for connecting the handle with the shaft could be extemporized. By percussion, however, upon the handle the blades were freed as much as possible from the débris, and the instrument removed from the bladder, some injury being inflicted on the neck of the bladder and urethra in its withdrawal. The operation was completed by the fenestrated lithotrite, and fragments weighing 500 grains removed by the tube and aspirator. The operation occupied two hours and ten minutes, a delay of twenty minutes being caused by the accident. No bad symptoms followed, and this was attributed to the complete removal of the fragments having been effected. Mr. Coulston remarked on the enormous power of the blades of the instrument, and the inadequate resistance to the force applied by the screw, due to the imperfect manner in which the handle is connected with the shaft.—*Lancet*, Nov. 27, 1880.

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Removal of Villous Growth from the Bladder.

Mr. DAVIES-COLLEY, at a recent meeting of the Clinical Society of London read notes of a case of villous growth of the bladder, sucessfully removed by perineal incision. Henry W., aged thirty-two, a shipwright, had suffered from hæmaturia for eight years. At first blood was passed only occasionally, and in small quantities. Latterly the flow had increased, and he had become so weak that for sixteen months he had been unable to work. He was admitted into Guy's Hospital last March. His family history was good. He was strongly built and fairly nourished, but very anæmic. There was a continual desire to micturate, and a feeling as if something always remained behind in the bladder. Blood was passed, sometimes at the beginning, sometimes at

the end of micturition. No stone could be detected, and all efforts to find villous masses in the urine failed. No tumour could be felt per rectum. On April 16, he was placed under ether. Mr. Davies-Colley then opened the bladder by the usual incision for lateral lithotomy. At first nothing could be felt. Then a slight projection was made out on the left side of the fundus, and a cord-like process running from it. In a short time the free end of this process, with a soft pinkish tuft of villi attached to it, was seen at the deeper part of the wound. This was seized with the forceps, drawn out, and the pedicle cut with a pair of scissors close to the wall of the bladder. No other growth could be felt. There was but little hemorrhage during the operation, and some which occurred in the evening was readily arrested by the injection of iced water into the bladder. He made a rapid recovery. In two weeks the urine ceased to flow from the perineum, and soon afterwards the wound healed. When last seen, two months after the operation, there had been no return of the hemorrhage. The irritability of the bladder had ceased, and he was in the enjoyment of perfect health. The tumour grew from the posterior wall of the bladder, at a point about three inches from its neck, and one inch to the left of the middle line. It consisted of a fibrous stalk one-sixth of an inch thick and two inches long, terminated by branching filaments from half an inch to three-quarters of an inch long. These filaments contained capillary loops, invested by many layers of epithelium of a cylindrical shape.

Professor HUMPHRY has recorded in the *Medico-Chirurgical Transactions* a case in which he successfully removed a fibrous polypoid growth from the male bladder. He mentions a similar success in Professor Billroth's practice. The chief difficulty in the male subject is to ascertain the presence of a tumour as the source of hemorrhage. In the present case the diagnosis depended solely upon the long continuance of the bleeding and the absence of other causes. Perhaps the fact of blood passing sometimes at the beginning, and other times at the end of micturition, may assist in the detection of growth. No doubt the villi were in this case sometimes washed into the prostatic part of the urethra, where they were squeezed, so as to give rise to a flow of blood before the urine; while at other times hemorrhage into the bladder was set up by the pressure of its muscular walls upon that part of the growth which lay in its interior.

Mr. CLEMENT LUCAS said that in these cases operative interference was justifable and reasonable. He had thrice performed cystotomy in chronic disease of the bladder with great relief. The diagnosis of villous disease was not assured until a small portion of the growth could be obtained and detected by the microscope. These cases often went on for years without much effect upon health. He had a case under his care for two years; astringent injections afforded some relief. Mr. Durham attempted the removal of a growth from the bladder a few years ago.

Dr. HABERSHON said that the patient on whom Dr. Davies-Colley had operated was very weak and prostrate on admission into the hospital, and it was evident that the hemorrhage came from the bladder, and not from the kidneys. There was often great difficulty in the diagnosis of these cases. He remembered a case in which the symptoms were attributed by one to calculus in the bladder, by another to calculus in the kidney, and by another to cancer. The patient suffered from hæmaturia, and at times intense pain in the penis. After three or four years' suffering a portion of a villous growth was passed per urethram, and all the symptoms ceased. Some pain returned after many years' interval. In other cases hemorrhage continues; and in the presence of such cases it was a great advantage to know that operative interference might be undertaken with relief.

Dr. A. P. STEWART said that about twenty years ago he sent in to the Middlesex Hospital from the out-patient room a woman who had suffered for many months from intermittent hemorrhage from the bladder, at times very profuse, then ceasing for weeks, and then returning. Mr. De Morgan made a digital examination of the bladder, but found nothing. The urine continued to contain blood at intervals, and ultimately the patient died. The bladder, with a pedunculated villous growth, is now in the hospital museum. The reason why it had not been detected by Mr. De Morgan was, that it was attached to the front wall of the bladder immediately under the pubes.

Mr. TEEVAN congratulated Mr. Davies-Colley on the case; the first and only case of successful removal of a villous growth by the knife. Civiale had removed one by the lithotrite. Villous growths were usually attached to the posterior wall of the bladder, whereas polypi were fixed to its neck. The diagnosis of such cases was difficult; and he mentioned one which he had lately seen with Dr. A. Clark, when in catheterism clear urine flowed at first, followed by pure blood and some shreds of villous growth. The patient was old and paralytic, so that attempt at removal of the growth was out of the question. Incision into the bladder for cystitis was done largely in America, and he himself had practised it four times, making the median incision. Perhaps an external urethrotomy would suffice; villous disease was not always fatal. He had seen a case where the mass was spontaneously extruded with recovery.

Mr. BARKER asked whether in the cases operated on by Professor Humphry and Professor Billroth the growths were as pedunculated as in Mr. Davies-Colley's case. In some cases the villous disease is distinctly sessile, and involves a large surface of the fundus of the bladder. Supposing a growth of that variety were cut down upon, it would be difficult to know how to deal with it.

Mr. DAVIES-COLLEY, in reply, said that the tumours removed by Professors Humphry and Billroth were not of the villous kind. Prof. Humphry's was a case of polypoid fibrous growth from the mucous membrane. In his own case had the growth been sessile, no doubt great difficulty would have been experienced, but still, by tearing and scraping much might be removed, and the hemorrhage checked at least for a time. It was generally possible to entangle a small portion of a villous growth in the eye of the catheter, and thus extract it for diagnostic purposes; and lately he had employed the washing bottle used in litholapaxy very effectually for the same purpose.—*Lancet*, Dec. 18, 1880.

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Washing out the Bladder.

Dr. FISCHER, in a paper on this subject in the *Berliner Klin. Wochenschrift* for November 29, objects to the ordinary double catheter, because, as the stream of fluid always enters the bladder on one side only, the other side of the bladder may not be sufficiently cleansed. To obviate this defect he has modified the instrument as follows: The fluid passes into the bladder at the extremity of the instrument, which is somewhat bulbous and perforated with holes, and it escapes through a slit near the curve of the catheter. The instrument is disinfected in a three per cent. solution of carbolic acid before being introduced. In injecting the fluid he uses the irrigator, and thus the fluid is introduced in a continuous equable stream, and not in jerks as when it is pumped in. He washes out the bladder in cases of chronic catarrh, in order to remove the mucus, etc. He also advocates the injection of cold water into the bladder in cases of atony of that organ. At the commencement of the injection the water must be tepid, but it is latterly introduced quite cold. The cold stimulates the bladder to contraction, and after these injections have been employed for a few times the organ begins

to regain its power. In destructive inflammation of the bladder he washes it thoroughly out before introducing any medicaments. Indeed, he thinks that continual irrigation with diluted remedies might in some cases be desirable.—*Med. Times and Gaz.*, Dec. 18, 1880.

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Varices in Pregnancy.

M. Budin, of Paris, has written an interesting monograph upon the varices of pregnancy. The most common varices are, of course, those of the leg. M. Budin points out that the signs and symptoms of varicosities of the superficial and of the deep veins are quite distinct. Those of the superficial veins are familiar to every one. In the case of deep varices there is nothing to be seen wrong with the affected leg, except that it is increased in size. The patient complains of severe pain in the calf, in the popliteal space, and in the sole of the foot; and there is increased perspiration of the affected limb. If such symptoms as these are rapidly relieved by rest, it is probable that a varicose condition of the deep veins is their cause. These varices are not constant in their mode of appearance. Sometimes they only become troublesome after several pregnancies, and then not till the last months of gestation; but in some women they are noticed in the first three or four weeks; one patient commonly first became aware of her pregnancies by the development of the varices. M. Budin also describes the varices of the internal and external genital organs, of the anus and rectum, of the urethra and bladder, and of the trunk and upper extremities. Hæmorrhoids often cause a good deal of trouble during pregnancy, but not danger; they commonly disappear after delivery. If fissure coexist, it will be best treated by forcible stretching. Varices of some kind occur in from twenty to thirty per cent. of all pregnancies.—*Med. Times and Gaz.*, Dec. 18, 1880.

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Peripheral Neuroganglioma.

Dr. Axel Key, of Stockholm, describes, in the *Hygeia* for 1879 (*Nordiskt Medecin. Arkiv*, Band xii.), the microscopic structure of a nerve-tumour removed from a journeyman tailor, aged 31, who was discharged cured after a stay of fourteen days in hospital. The tumour had commenced as a small knob in the soft parts in the neighbourhood of the left ala nasi, and had grown in the course of a year to the size of a plum. The extirpated tumour was encapsuled; it was not adherent either to the skin or to the subjacent bone; it was grayish-red in colour, homogeneous, and rather soft. After hardening in Müller's fluid, it appeared to be of tolerably firm consistence; it was sharply defined, with smooth round projections, and was of somewhat irregular flattened shape. To one of the projections were attached some shreds, like connective tissue. Macroscopically, it was like a sarcoma, and had been diagnosed as such in the hospital. The microscope, however, revealed an entirely different structure; namely, very large cells, which completely resembled ganglion-cells, and were inclosed in perfectly developed capsules, the interior of which had the same appearance as the capsules of ganglion-cells. The cells were apolar; and not only one, but two or three, or even more, were contained in the same capsule. In the shreds connected with the tumour was found a nerve broken up into fine fibres of unequal size, probably a portion of the infra-orbital. On examining these branches of nerve, it was clearly seen that the large ganglionic elements of the tumour were developed from the nerve-fibres. Thus there was in this case a true ganglioma, which throws light on the hitherto unsolved question, whether a tumour of this kind can be developed on a peripheral nerve. Only one case of ganglioma is described in

medical literature, viz., by Loretz in Virchow's *Archiv;* but the tumour, which was of the size of an egg, had proceeded from a pre-existing ganglion, and was thus a simple hyperplastic new growth. The case reported by Professor Key renders it certain that a ganglioma may be developed from a peripheral nerve, altogether independently of preceding ganglionic formations; and hence, in order to avoid all misunderstanding, Dr. Key calls this new growth, "neuroganglioma verum peripheriсum."—*British Med. Journ.*, Dec. 11, 1880.

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The Plaster-of-Paris Jacket for the Treatment of Fracture of the Spine.

Sayre's jacket meets, as is well known, with a varying amount of approval in the hands of different surgeons. Those, however, who use it most frequently will, we believe, allow that its indiscriminate use will not lead to invariably satisfactory results; and not only so, but that some promising cases appear to go progressively from bad to worse notwithstanding the application of the jacket, while others in which its employment has seemed at first likely to be of doubtful utility have, contrary to expectation, been much benefited by it. We can call to mind two cases—one of a boy with an early condition of spinal caries in the dorsal region (just the case, it might be said, for the treatment), who, in six weeks after his jacket was put on, had a large psoas abscess; and another sickly child, with disease in the same part of the spine, and marked fulness in one iliac region, who, nearly a year after the plaster of Paris was applied, had a tolerably strong back, but in whom no abscess had shown itself. The use of this apparatus has long been suggested—and, we believe, practised—for fractured ribs, and from its employment for this purpose it is difficult to imagine any evil result following; but our German brothers have recently been using it for another object, in which, as might have been expected, a very varying amount of success has been attained.

In No. 7 of the *Centralblatt für Chirurgie* for this year is a paper by Professor König, of Göttingen, on the application of the "Thorax Gypsverband" for fractures of the spine, which recounts three cases, in all of which, although considerable displacement was present, very slight, if any, nervous symptoms had arisen. In each of these three instances the patients were suspended sufficiently to correct the deformity, and a long jacket reaching down to the trochanters was put on; and every one of them made a complete and rapid recovery. On the other hand, in No. 46 of the same journal we find a paper by Dr. W. Wagner, of Königshütte, which tells of two similar cases in which, after the application of the jacket, such intense pain in one instance, and paralysis in the other, set in, in the lower extremities, that it was necessary to remove the apparatus. In one it was re-applied later, with comfort to the patient. Both patients recovered. Professor König, after pointing out that all the cases treated by him in this way were recent and simple, adds that it is obvious that if extensive injury of the spinal cord is present, especially if the injury be of some standing, and bedsores have perhaps already developed themselves, it cannot be expected that the case will be benefited by the treatment; but, as he says, the diagnosis of the degree of injury is not, as a rule, a very difficult one. For uncomplicated cases the plan seems likely to prove of great service, and is undoubtedly an improvement on any of the older methods of treatment now in vogue; but the moment of suspension can scarcely fail to be one of anxiety to the surgeon, as it is easy to understand how the correction of a deformity may cause pressure on a cord which has previously escaped injury. This danger is very likely more hypothetical than real, and is probably exaggerated in our minds by the cautions that have been impressed upon us, as students, against attempting to rectify deformities so

produced—the practice of "letting sleeping dogs lie" having commended itself to our fathers as, on the whole, the safest.—*Med. Times and Gaz.*, Dec. 18, 1880.

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Fracture of the Sacrum.

By its position and structure the sacrum is peculiarly free from liability to fracture except from bullet wounds, and, although it is sometimes found fissured, or even comminuted in severe crushes of the pelvis, simple uncomplicated fracture of this bone is a very rare accident. Erichsen has seen one such case, the injury being a blow from the buffer of a railway carriage, and proving rapidly fatal. Agnew says that simple transverse fracture of the sacrum is usually accompanied by fatal injuries to the pelvic viscera.

A remarkable case has recently been put on record in Paris. A woman, thirty-six years of age, was brought into the St. Lazare Hospital with the history of having fallen about eight feet on to her buttocks. She fainted, and when she was conscious was quite unable to sit. A slight transverse depression corresponding to the middle of the sacrum was readily felt from the back, the part was very tender, and pressure gave fine crepitus; extensive ecchymosis quickly occurred over the whole sacrum. From either the rectum or vagina the line of fracture was readily felt, and the projection forwards of the lower half of the sacrum verified, this part of the bone was easily moved with crepitus. Reduction was easily effected by the finger pressed back from the front, and displacement did not recur. A bandage was applied firmly round the pelvis and the patient kept in bed. Defecation gave intense pain, and the woman was unable to lie on her back for a fortnight, but sat up in bed on the twenty-eighth day, and got up in the ward on the forty-second day. There were no signs of pressure upon or other injury of the lower sacral or coccygeal nerves.

In cases where there has been a tendency for the displacement to recur, various mechanisms in the rectum have been employed to keep the bone in position, such as a plug of wood, a stuffed silver canula which could be opened to allow the passage of feces. The ease with which in the above case the reduction was effected shows that the displacement was due to the direction of the fracturing force, and not to the action of the muscles attached to the lower fragment. The main difficulty in the treatment of these cases where the fracture is the sole injury is the intense pain in defecation, and the local disturbance it induces. Some have, by means of opium, kept the bowels confined and then cleared the rectum by an enema every week or ten days. It is still better to diet the patient very carefully with a view to the production of the smallest possible quantity of feces, which may then be easily and almost painlessly removed by means of an enema every three or four days.—*Lancet*, November 20, 1880.

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Tight Rings.

Treatises on operative surgery are absolutely silent on the constriction, by rings, of fingers swollen from one cause or another, and on the method of removing them. The accident is, nevertheless, of common occurrence, causes great pain, sometimes gives rise to great uneasiness, and may even threaten the safety of the finger itself. As a rule, in these cases of constriction, the ring is cut unnecessarily, for want of a simple method of removing it, notwithstanding the popular plan which comes to us by tradition, and is thus described by Oribasius, vol. iv. p. 251, Daremberg's edition. He writes: "Sometimes the finger is constricted by a ring; and it is necessary to remove the ring without delay, by giving it a rotatory motion; bathing at the same time the finger with warm water, and greasing it

with some kind of fatty matter. If the ring do not yield to these efforts, the following operation is recommended. A thick and twisted thread is sharpened at one end in the same way as cobblers sharpen their threads, and passed between the finger and the ring, whilst the rest of the thread is rolled round the finger. When this thread is unrolled, the ring moves towards the tip of the finger, whence it can be removed. If the ring resist this treatment, it is then necessary to cut it." Aetius, who lived at the end of the fifth and the beginning of the sixth centuries, repeats the recommendations of Oribasius. A writer in the *Concours Médical* suggests some improvements on the plan, so as to reduce the volume of the finger by ischæmiatizing it, in the same way as ischæmia is produced with Esmarch's bandage. In the first place, the finger is coated with fatty matter; then a thin thread, about a yard and a quarter long, is taken; one end is placed under the ring, and passed above it with a pair of pincers to the length of about three inches. The end of the thread being thus fixed by the ring, the rest of the thread is taken to the top of the finger, round which it is rolled in close overlapping lines, not leaving any space between them. This done, the second end of the thread is also passed under, and brought up above the ring. Then, this end being taken between the fingers, the rest of the thread is unrolled resting on the ring, which is thus gradually brought up to the point, where it is easily removed. If a first trial do not always succeed, it is rare for the ring not to yield to efforts twice or thrice repeated. Should this be the case, the ring, of course, must be cut on a canulated sound with a file or divider.—*British Med. Journal*, Dec. 18, 1880.

Midwifery and Gynæcology.

On Listerism in Gynecology and Midwifery.

FRANKENHAUSER (*Centralblatt f. Gynaek.*, No. 22, 1879) thinks that the principal agent in producing infection is impure air. He, therefore, performs all his operations under the spray, and limits the number of students at his ovariotomies to four or five, who take off all unnecessary articles of clothing before coming into the operating room. On the other hand, he looks on the prophylactic intra-uterine injections *post partum* as carrying with them more danger than they avoid. If the hand has to be introduced into the genitals, it is always done under the spray, which is even used when making an ordinary examination, for he thinks it is much easier to prevent the entrance of impure air than to wash away septic material once it is formed.

When reporting Frankenhäuser's paper, Oeri says that for some years back, in Bischof's clinique, the spray is always used when the hand has to be introduced into the uterus, the perineum to be sewn up, as well as during many gynecological operations. Even during the time, however, when the antiseptic injections alone were made use of, it was usual to find patients recovering after protracted labours, manual removal of the placenta, or decomposition of the ovum, without any feverish symptoms.

In the report of the obstetrical clinique of Prof. WEBER RITTER von EBENHOF, in Prague, for the year ending Ap. 30, 1879 (*Centralblatt*, No. 26, 1879), a description is given of the precautions that are taken for avoiding septic infection during labour and the lying-in state. No student is allowed to make any examination who has any sort of sore on the hands, or whose nails are long or dirty. Even after the most thorough washing of the hands the students are

obliged, before making an examination, to rinse them first in a two per cent. solution of carbolic acid, and afterwards in a solution of permanganate of potash and weak hydrochloric acid. The finger is then covered with a five per cent. solution of carbolic acid in glycerine. As soon as a new patient is admitted her vagina is washed out with a two per cent. solution of carbolic acid, and the parts about the vulvæ thoroughly washed with soap and carbolic acid solution. If the labour be long delayed after the escape of the waters, the vagina is washed every two hours with carbolic acid solution. In order to prevent the entrance of air into the vagina a wad of cotton steeped in dilute liq. chlori. (1 to 3) is laid before the vulvæ. After the expulsion of the placenta the vagina is washed out by the head midwife with carbolic acid solution, and if the labour has been a protracted one, the fœtus decomposed, or any operation been undertaken, the assistant himself must wash out the uterus with a three per cent. carbolic acid solution. All fissures of the genitals are closed with carbolized catgut, and ruptured perinea with carbolized silk. If the vagina has been much bruised a wad of cotton-wool saturated with camphor is passed into it immediately after the removal of the placenta. In all natural labours the child is born under the hand-spray, and all operations are performed under the steam-spray. The placentæ, till removed from the ward, are placed in a solution of carbolic water. All dead children are at once removed, and closets for soiled linen are disinfected with chloride of lime. To prevent infection after labour the vagina is washed out every two or three hours with lukewarm two per cent. carbolic acid solution, which has previously been boiled. If fever is present a carbolic acid decoction of chamomile flowers of the same strength is used. All the old tin injection tubes have been replaced with glass ones. In all cases where the passage is injured or there are puerperal ulcers, a wad of cotton is laid before the vulva, impregnated with carbolic acid or camphor. The nurses are made to wash their hands in carbolic solution after having in any way come in contact with the genital tract of a lying-in woman. It is of great importance to treat the first indications of fever promptly by injections of three per cent. solution into the uterus, and the administration of purgatives. Nine mothers died out of 925 mothers thus treated, being a mortality of less than one per cent.

Of late years it has been proposed, with a view of lessening the chance of puerperal infection, to wash out the vagina, cervix, and uterus of every lying-in woman with a three per cent. solution of carbolic acid immediately after the child is born. Hofmeier (*Centralblatt f. Gynaek.*, No. 5, 1880) found that of 260 cases treated thus prophylactically by him in the University Lying-in Hospital in Berlin, 16 per cent. were attacked with fever, 8 of them very severely, while of 249 patients not so treated only 8 per cent. got ill, only 1 case being serious. Hence he concludes that such treatment of ordinary cases does more harm than good.

It is very different, however, when we have symptoms of putrefaction or decomposition taking place during labour, accompanied by the formation of gas in the uterus and elevation of temperature in the patient. Stande found that 57 per cent. of such cases were attacked with fever, and that 50 per cent. died. It is evident, therefore, that we should endeavour to remove and render harmless every particle of decomposing matter, for which purpose it will be necessary to use a tolerably strong solution (at least five per cent.) of carbolic acid. Of 27 such cases, with temperatures reaching above 106° F. and pulses up to 144, that were thus treated *post partum*, 6 only died, or 22 per cent., and 18, or 60 per cent., made an uninterrupted recovery. The wonderful contrast between the threatened danger and the undisturbed convalescence can only be properly

appreciated by a perusal of the whole history of such cases which Hofmeier hopes shortly to publish.—*Dublin Journal of Medical Science*, Nov. 1880.

Absence of the Vagina; Uterus distended by retained Menstrual Fluid; Operation; Recovery.

At a late meeting of the Obstetrical Society of London (*Lancet*, Nov. 27, 1880), Dr. C. H. CARTER stated the case of a patient, aged sixteen, who had never menstruated. Pain had begun two years previously, and recurred almost daily. The urethral orifice was found large, the vagina absent. By rectal examination the finger felt the sound in the bladder with only a thin layer of tissue intervening. About one and a half to two inches up the rectum a rounded elastic mass was felt, reaching up half way to the umbilicus, about the size of the uterus at the third or fourth month of pregnancy. On July 25th the operation was performed for making an artificial vagina. After slight longitudinal and lateral incisions, the passage was chiefly torn by finger and director. Nothing like os or cervix uteri could be detected. The uterus was first punctured with the aspirator, and the opening then enlarged with a bistoury. About ten ounces of treacly matter escaped; several ounces of treacly fluid were afterwards expelled, and the same evening the dressings were soaked with fresh blood. The next day syringing out the uterus with carbolic lotion (1 in 80) was commenced. For about ten days there was some elevation of temperature, and a rapid pulse, 112 to 130, but the disturbance then passed off. When the patient went out on Oct. 11th, the new vagina had narrowed a good deal, and only admitted the finger for about three-quarters of an inch. Thick sounds were passed occasionally to keep open the passage into the uterus, and menstruation took place regularly after the operation. In October of the following year an examination was made, and it was found that the ordinary sound could not be passed into the uterus, but a small-pointed sound could be passed into it three inches and a half. The author expressed to the mother his opinion that marriage was inadmissible, since delivery could not take place *per vias naturales*.

Dr. GALABIN'S experience was, that the difficulty of keeping an artificial vagina in a condition fit for married life and parturition was considerable. He had had a similar case, in which also no trace of os or cervix could be detected. An artificial vagina was successfully made, and the patient afterwards menstruated naturally; but the attempt to keep the passage of full size was defeated by the fact that the pressure of the dilator repeatedly caused an opening into the bladder, though without producing any continued incontinence of urine.

Dr. ROUTH said that in his own case the patient had not died from the operation, but from the rupture of another cyst. He believed that in most of these cases the vagina had originally existed, but became subsequently adherent. He thought so in his own case, from the ease with which he tore it open. He thought that the passage could be kept dilated by using sponge-tents, and subsequently Sim's dilators. The dilators should not be too large, and should not be worn more than a few hours at a time; they then would not cause inflammation. He mentioned a case in which Mr. Baker Brown had made a good artificial vagina, and the girl subsequently went upon the town and consorted with Life Guardsmen.

Dr. BRAITHWAITE said there were two classes of cases of atresia, one being incomplete, a fistulous track existing. From the presence of mucous membrane in this contraction was less likely. When the atresia was complete he thought that mucous membrane might be transplanted from the vulva or from an animal, to prevent the tendency to contraction. In a difficult case, the urethra might be dilated and the finger kept in the bladder, and the thumb in the rectum, during the operation.

Dr. GODSON said that he had that morning seen a young woman for whom he had reluctantly made an artificial vagina two months since. There was no retention of menses, but she had married in ignorance of her deformity. Though a fortnight ago there was a capacious canal, it would now barely admit a penholder. He believed that such failure was inevitable, and would not again operate unless there were retained menstrual discharge.

Dr. AVELING thought that Dr. Carter was quite right in dissuading his patient from marriage. He did not agree with Dr. Routh that the majority of cases of absence of vagina were due to inflammatory adhesion. In the three cases he had seen it was evidently congenital, as the uterus was also absent, though the ovaries were present.

Dr. CARTER, in reply, said that Dr. Emmet stated that the tendency to close depended upon the passage being made by cutting rather than by tearing. He did not think that the tendency to contract depended altogether upon the absence of mucous membrane, but rather upon the contractility of the tissues, since in his case a mucous membrane like that of the labia minora was noted in the new passage. He agreed with Dr. Galabin that it was better to defer washing out the uterine cavity a short time. He did not recommend marriage in his case, because the end of the new vagina was closely attached to the margins of the opening into the uterus. No natural dilatation of this opening could occur in labour, and Cæsarean section would probably be necessary.

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The Mechanical Dilatation of the Uterus.

FRITSCH thinks (*Die mechanische Uterus Dilatation, Centralblatt f. Gynaek.*, No. 25, 1879) that where our only object is to dilate the uterus we should entirely abandon such means as the sponge-tent, laminaria, or tupelo, in favour of rapid instrumental dilatation, by which we can so entirely avoid all risk of septic infection. He uses for this purpose graduated steel sounds, seemingly very similar to those proposed by Peaslee in 1870. The thickest is about the size of a thick finger; the smallest is somewhat larger than a thick sound (0.5 mm.). He first introduces one of the smaller sounds to the inner os, and then grasps the uterus externally, and presses the fundus down over the sound. This often requires an amount of force which would be quite unallowable if applied only from within, without the control of the hand externally. The danger of septic infection can certainly be avoided by using frequent injections, and it is much safer than the metrotome. He has made use of the method in multiparæ to remove retained portions of an abortion, mucous polypi, and to enable him to use the curette. As to its efficiency in cases of dilatation of the inner os he has no experience.

It is only when we wish to produce artificial infiltration of the uterus that the slow process is indicated. If we wish to strengthen a flabby uterus, to give tone to the circulation, or increase the power of contraction, then we should make use of the laminaria. If we only want to open the way into the uterus, then we should use rapid instrumental dilatation.

This paper has elicited one from Professor C. SCHROEDER, of Berlin ("Sind die Quellmittel in der gynaekologischen Praxis nothwendig?"—*Centralblatt f. Gynaekologie*, No. 26, 1879), in which he says that he does not think that in private practice he has made use of the slow method of dilating the uterus for more than one and a half years, and even in hospital it is now only rarely that he does so, and when he finds it necessary he uses the tupelo tent. Many years ago he procured a set of graduated sounds, such as Fritsch advises, but uses them only very rarely. Nor can he say that he has been led to abandon tents from finding their use too dangerous, for he thinks such accidents as have occurred

might be certainly avoided in the future by following Schultz's antiseptic method, which has, however, the disadvantage of most wearily lengthening the whole process. He has, however, been led to abandon them, partly because, in many cases where he formerly used dilatation for the purpose of diagnosis or treatment, he can now attain his object by means of the sharp scoop, which can be passed through the undilated os, and part or all of the mucous membrane of the uterus so removed. When, however, he requires to pass the finger into the uterus, he now first incises both sides of the cervix as far as the roof of the vagina on both sides, and then forces the finger into the cavity, either by pushing down the fundus from above, or drawing the cervix over the finger by means of a Museaux' vulsellum. In some cases it is quite surprising how readily this may be done; in difficult cases we will generally rupture some of the fibres of the inner os. These slight ruptures, if not infected, heal readily, and when we have finished our diagnosis or treatment we can close the cut sides of the cervix with sutures.

Though a very large number of cases come annually before him, he has in this way been led almost entirely to give up the use of tents for dilating purposes.

In the number of the same paper for April 24th of this year, Dr. FRANCK gives an account of the results obtained by using Prof. Schultz's dilator—the essential conditions for its use being that the cervical canal should measure at least 6 mm., and that there is no inflammatory process going on in either the uterus or its appendages. The instrument, after being thoroughly cleansed and disinfected, is passed into the uterus and the branches separated. The amount to which this is possible varies greatly with the condition of the uterine tissue and the varying amount of pain experienced by the patient. The instrument is then withdrawn to see what size the passage is, and before it is again introduced the uterus should be carefully washed out with warm water to prevent infection. With such precautions it is absolutely without danger, and it has the great advantage that it produces the same amount of dilatation in a few minutes that laminaria tents do in about eight hours. In cases where the woman has not borne a child, or where the cervix has not the diameter of 6 mm., it is necessary to begin with a single laminaria tent. He says the patient after the dilatation must remain lying for at least an hour, but need not necessarily be confined to bed. If the spasmodic pains still continue she should have an opium suppository and warm stupes to the abdomen. He thinks that this dilatation repeated at intervals has a powerful effect in curing subinvolution and flaccidity of the uterus. It also causes the expulsion of portions of retained placenta or membranes, and retroflexions may also be cured thereby, provided there are no adhesions present. Stenosis of the inner, but not of the outer, os will yield to this treatment.

In *The Lancet* for Nov. 1, 1879, Mr. LAWSON TAIT gives twelve cases in which he dilated the cervix by continuous elastic pressure. He says: "I have had such unsatisfactory results from all kinds of tents in dilating the cervix uteri that I have long desired to get something which would accomplish this more safely, more speedily, and with less pain. Having been struck by the ease with which an inverted uterus can be returned by continuous elastic pressure, I applied this method for the purpose of dilating the cervix, and my results have been so completely satisfactory that I hasten to narrate my experience of the first twelve cases in which I have used it." The advantages of the plan are that it is absolutely free from smell and septic risks, and almost free from pain. It produces more complete dilatation of the whole canal than that obtained with tents. The dilators are made of vulcanite, and are sold in sets of four sizes to screw into a common stem. "The only precaution necessary in their employment is to use

extremely gentle pressure." In this paper Mr. Tait does not, however, enter into any details as to how the continuous elastic pressure is to be applied.

Just as we were going to press we received one of the series of *Volkmann's Clinical Lectures*, by Dr. LEOPOLD LANDAU, on "The Various Methods of Dilating the Uterus" (*Ueber Erweiterungsmittel der Gebärmutter*), which treats the whole subject in a most exhaustive manner.—*Dublin Journal of Medical Sciences*, Nov. 1880.

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On the Treatment of Ruptures of the Uterus.

Dr. FROMMEL, Assistant Physician to the Gynecological Clinique in Berlin, publishes two interesting cases of this accident in No. 18 *Centralblatt für Gynäkologie*, 1880. Case I. refers to a patient 40 years old, who had given birth twelve times previously, and who suffered from slight contraction of the pelvis—diagonal conjugate being 4 inches. The labour had been a prolonged one, and had suddenly become arrested, when the assistance of Dr. Hoffmeier was obtained. He removed without great difficulty, by version, a dead full-grown child, and discovered an almost complete tranverse rupture of the uterus between the lower segment and the cervix, only a bridge of tissue about 2½ inches broad to the left and anteriorly remaining to connect the two. The peritoneal investment of the uterus was quite entire; but as the child had passed out through the rent in the uterine tissue, it was almost completely separated from the uterus, so that now a large cavity shut off from the peritoneal cavity existed. Dr. Hoffmeier caused the patient to be immediately brought to the hospital, in which a thorough irrigation of the cavity with a warm two per cent. solution of carbolic acid was performed under chloroform, and a thick drainage tube introduced through the vagina into the cavity. This was secured in position. An ice bladder was put upon the abdomen. The condition of the patient was after this satisfactory. No vomiting; pulse strong, regular, 84. The highest temperature which she reached was 100° on the evening of the sixth day. This was also the only time that an antiseptic injection was made through the drainage-tube. For the first few days the patient got only a little fluid nourishment. From the eighth day gradually more nourishing food was administered. During the first days a tolerably copious bloody fluid was discharged from the drainage-tube, which after a few days became less bloody, and, finally, purely pus. On the twenty-sixth day, no further discharge appearing, the drainage-tube was taken out. On the twenty-eighth day the patient was allowed to rise, and on the thirtieth day she was discharged. On internal examination an opening several centimetres deep was found to exist anteriorly to which the finger could penetrate up to the peritoneum. On the right there was a considerable amount of exudation; the uterus somewhat dislocated towards the left and retroflected. General condition good. The second case was that of a patient 30 years old, who had suffered from rickets in early life, and had three times been delivered naturally. In her fourth confinement, in consequence of the labour proving tedious, the midwife administered four powders of ergot. A medical man who was called prescribed morphia, and, having obtained the aid of another medical friend, diagnosed rupture of the uterus, for which laparotomy was decided upon. The execution of this operation was prevented by the opposition of a drunken husband, whereupon the patient was taken to the hospital. On examination under chloroform the parts of the child were to be felt directly under the abdominal wall. Internal examination discovered the child situated with its head presenting, quite movable, at the pelvic brim, the whole child and placenta having passed into the abdominal cavity. The body of the uterus was almost entirely torn from the lower segment and cervix, except for

a small connecting part on the posterior wall, and lay powerfully contracted, pushed upwards and backwards. Professor Schroeder delivered at once, by version and extraction, a fresh, full-grown female child, whereupon the abdominal cavity was washed out with two per cent. carbolic acid, and a thick drainage-tube introduced as high as possible into the peritoneal cavity, which was secured likewise by suture to the posterior commissure. On the abdomen a bandage was so applied that the uterus was pressed firmly backwards and downwards, and also the cavity compressed. Thereby a great accumulation of blood in the abdominal cavity was prevented. In addition an ice-bladder was put on the abdomen. The condition of patient thereafter was wonderfully good. The pulse was somewhat frequent and irregular, but powerful; the temperature not elevated. This case also ran a favourable course. During the earlier days a copious bloody fluid was discharged through the tube, which became purulent after ten or twelve days. The temperature only once rose to 101°. As often as it exceeded 100°, which it did on several evenings, a two per cent. carbolic solution was injected into the cavity through the drainage-tube, which readily flowed out past the tube. For the first few days attempts were made, by the administration of opium, to prevent peristaltic action of the bowels, so as to allow the formation of adhesions around the torn part. The pulse, which from the first was frequent, ultimately settled down to about 100, but was strong and regular. On the seventeenth day after delivery the drainage-tube was removed, when the opening was found only large enough to hold the tube, and secreted a small quantity of laudable pus. On the nineteenth day the patient got up, felt well, and complained of nothing. Two days afterwards she was discharged. To the account of these interesting cases the author adds a few words in recommendation of the practice.—*Edinburgh Med. Journal*, Nov. 1880.

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Hyperpyrexia after Listerian Ovariotomy.

At a late meeting of the Royal Medical and Chirurgical Society, Dr. BANTOCK read a paper on this subject which elicited one of the most animated debates upon Listerism which has yet occurred in London. Dr. Bantock stated that Mr. Lawson Tait had already questioned, before the Society, the advantages attributed to the Listerian precautions in the operation of ovariotomy. The absence of pyrexia has been claimed as one of the best results following such precautions. In this paper the fact that pyrexia is absent in cases treated antiseptically is disputed on clinical evidence. In the author's own experience, the Listerian method in a series of thirty-six cases shows in its favour a difference of but 0.4°, compared with the same number of cases undertaken without complete antiseptic precautions; the very lowest temperature occurred after a non-Listerian ovariotomy. Volkmann admits a condition of poisoning from absorption of carbolic acid, and terms this accident "aseptic fever." Thiersch has encountered instances of great irritation from this agent, and now employs salicylic acid in its stead. Keith finds very little difference in the temperature of series of cases undertaken under the old and the new method. In three Listerian cases the temperatures were the highest he had ever seen. Before adopting antiseptics he never found the ice-cap necessary for the reduction of pyrexia, excepting in one acute case of septicæmia. On the other hand, Mr. MacCormac asserts that the rise of temperature in Listerian cases is slight or absent, and when present is due to other causes; Mr. Spencer Wells has found that, contrary to Mr. Tait's experience, pyrexia is subdued by antiseptics. Mr. Thornton has observed no fever at all, as a rule, after antiseptic ovariotomy. When, however, an operator is disposed to support Listerism, he may readily attribute to other influences ill

results, of which it alone can be the cause. It is easy to explain how pyrexia follows "antiseptic operations." Carbolic acid is an irritant; its great advocate introduced the "protective" to counteract its irritating qualities. It is also a poison. It has caused death when inhaled, and has produced very serious symptoms when absorbed; this is illustrated in cases related by Lister, Lightfoot, Hanhorst, and the author, who describes at length two cases of poisoning from prolonged action of carbolic spray in complicated ovariotomies. In both, the kidneys were affected by this medium. Agostini relates a case of poisoning from carbolic acid solution injected frequently into an abscess cavity. Thomas Smith and others have noted the bad effects of this acid in operations upon children. The author observed albuminuria and temporary suppression of excretion of sulphates in the urine of a young girl after antiseptic ovariotomy. Sonnenburg, Lightfoot, and others have also found that sulphates disappeared from the urine in similar cases, whereas in the author's patient that excretion did not become dark. Hence carbolic poisoning is not always indicated and exposed by discoloration of the urine, as is generally believed. Keith admits that evil effects may result from prolonged action of spray. The hyperpyrexia which follows is due not solely to reaction, but also to carbolic intoxication. The whole merit of Listerism lies, not in the supposed good effects of carbolic acid, but in the cleanliness which it promotes. By greatly reducing the strength of the solutions used in operations, the author has gained excellent results with absence of pyrexia.

Mr. ERICHSEN remarked upon the local anæsthetic effect produced by the carbolic spray. It produced a numbness of the hands, and he thought this showed that the carbolic action had some action on the peripheral nerves.

Mr. KNOWSLEY THORNTON said, that no one had claimed that Listerism was never followed by pyrexia, unless it were Mr. Tait himself, who, in his paper published in the recent volume of the Transactions, says (page 133): "As the temperature and pulse-curve are uniformly admitted to represent the course of any case involving febrile action, if the antiseptic system makes its claims justly, ovariotomies performed under its precautions ought to indicate a more even and less febrile course of recovery than the non-antiseptic cases, and this should occur independently of all other details of the operation." Obviously more fever must follow a difficult operation than a simple one. In the debate on that paper Mr. Holmes remarked that the whole question was one of "impressions," and he (Mr. Thornton) resolved now to state facts; and to contrast the temperatures of non-antiseptic and antiseptic ovariotomy. Of the former he had had twenty-five successful cases with an average stay in hospital after operation of 26.3 days, and of the latter 150 successful cases with an average stay of 20.5 days. In twenty-five non-antiseptic cases the ice-water cap was used seventeen times, or in 68 per cent.; in 150 antiseptic it was used thirty-one times, or 20 per cent. It was used to reduce temperature in twelve non-antiseptic cases, or 48 per cent., and in fourteen antiseptic cases, or 9 per cent. On this point he saw from a letter from Dr. Bantock in the *Medical Times* that he agreed with him. In the remaining cases the cap was put on to prevent high temperature—viz., 20 per cent. of the non-antiseptic cases, and in 11 per cent. of the antiseptic cases; but of late he had limited its use to the reduction of temperature only. In the non-antiseptic series the temperature never rose above 100.4°—*i. e.*, there was no fever in but two cases, or 8 per cent., in the antiseptic—forty-five cases, or 30 per cent.; and if the cases in which there was a slight additional rise of 1° or 2° for a few hours be included, the figures would be 32 per cent. of the non-antiseptic series, as against 75 per cent. of the antiseptic recovering without fever. Dr. Bantock should not have styled his cases as Listerian ovariotomies at all, and the number (thirty-six) was too small to draw such large inferences as he

had done. Although he himself had practised antiseptic ovariotomy in 200 cases, he felt he had yet much to learn in the application of the method, and he generally found that when a case went wrong some detail had been omitted. In his last 100 cases, with a mortality of 7 per cent., three patients died from septicæmia, a result which he was sure would not have occurred had he thoroughly acted up to the theory of Listerism, and in Dr. Bantock's cases the drainage-tubes were often changed by the nurses during the night, a practice certainly *not* that of Listerism. Recently Dr. Bantock had (in *The Lancet*) published statements of practice which he styled Listerism, but which only proved that he was not in a position to carry out that practice, so contrary were they to Lister's express teaching.

The occurrence of nephritis could not be attributed to carbolic acid poisoning, for long before antiseptics were introduced into ovariotomy deaths occurred from suppression of urine, etc., and quite lately he had such a case, in which death took place within twenty-four hours after the removal of a tumour weighing 88 pounds, there being chronic Bright's disease. Septicæmia, too, was often fatal from failure of the kidneys to act, and comparison of the post-mortem records of such cases before the days of antiseptics showed no difference in the lesions observed in them and in those cases attributed to poisoning by carbolic acid. A German surgeon had recently said that in his country they had become so convinced that septicæmia had been banished by Listerism that deaths formerly attributed to this cause were put down to the toxic effects of carbolic acid. It was one thing to use the method and another to act up to Lister's practice and theory, and it would be far better if those who did not accept the theory would cease to practise the method, since their failures were no proof of the falsity of the theory. When studying under Professor Lister, at Edinburgh, he had repeatedly seen the urine darkened by carbolic acid without any other effects. He failed to see on what principle Dr. Bantock used a 1 per cent. solution of the acid, which Dr. Bantock said was no longer germicide. If so, why trouble to introduce this 1 per cent. of an "irritant" and a "poison?" Was it done to increase the cleanliness of the water? Dr. Bantock's results at the Samaritan Hospital were the same as those obtained by Mr. Spencer Wells without antiseptics at all, and using chiefly the extra-peritoneal method.

Mr. TAIT says that the advantages claimed for Listerism are really due to the adoption of intra-peritoneal method. But was this so? He had compared the statistics of the Samaritan Hospital for periods of six years with this result. Mr. Spencer Wells, from 1872 to 1877 inclusive, had 191 cases (extra-peritoneal) with a mortality of 20 per cent.; Dr. Bantock, from 1875 to 1880, inclusive, had 136 cases (intra-peritoneal and modified antiseptics) with a mortality of 17.64 per cent. Mr. Thorton in the same period had 181 cases (intra-peritoneal and antiseptics), with a mortality of 11.6 per cent. These differences were due to the more thorough use of the antiseptic method. In the present year, Dr. Bantock, using his *very modified* antiseptic method had had forty cases with a mortality of 12 per cent.; Mr. Thornton with pure Listerism, had fifty-four cases with a mortality of 7.4 per cent., including two deaths from septicæmia, which he attributed to failure in carrying out the method. Still, Mr. Wells in the last two years of his hospital practice had only a mortality of 10 per cent. in intra-peritoneal cases, a result largely due to the use of the ice-cap and drainage. In his own last 100 cases, Mr. Thornton had a mortality of 7 per cent., twenty-seven of these being private cases, with one death—a case of unusual difficulty. All this went to prove that with every case the mortality without Listerism could not get below 10 per cent.; and if by the adoption of the method the mortality

could be lowered by three or four per cent., that end was alone worth the extra trouble and difficulty entailed by the method.

Mr. Lawson Tait was surprised that Mr. Thornton should have quoted the passage from his paper in the sense he did, and regretted that there did not seem to be a clear understanding as to the meaning of Listerism; since it had just been stated that it was no part of the Listerian theory to avert septic fever. Hitherto he had thought that the whole aim of the theory was to eliminate this surgical fever after operations. If this were not its aim, what was it? In fatal cases of ovariotomy the temperature rises steadily to the end. He could not then concur in any of Mr. Thorton's remarks. As to the duration of stay in hospital, there was a great difference between cases in which the clamp was used and those in which it was not.

Mr. Thornton said he had excluded all clamp cases from this reckoning.

Mr. Tait, proceeding, said that he had a series of 137 abdominal sections, in which 48 were done with *extreme* Listerian precautions, and the remainder successively by the elimination, one after another, of these precautions; so that after reducing the strength of the carbolic spray to 1 in 150, he had finally conducted the whole of the process under a spray of water alone! And so far as the temperature went, it had diminished in proportion as the amount of carbolic acid was lowered. In the 48 pure Listerian cases there were 5 deaths; in the 91 "modified" cases, 6 deaths; and he did not know if any better result could be obtained than that. With Listerian precautions the wounds never heal by first intention, but always with formation of pus; and Dr. Savage who practises Listerism, remarked that in his cases the wounds did not heal so well as Mr. Tait's without it. Mr. Tait had had one case in a young woman, from whom he had removed both ovaries—no adhesions—in which the temperature rose to 112°, and remained at that height for forty-eight hours. She recovered perfectly, and there was nothing in the case but carbolic acid poisoning to account for the remarkable rise in temperature. The ice-cap could not be cited as a criterion; he himself had never used it. He once used Dr. Richardson's "collar," invented many years ago; but the case proved fatal, and he never used it again. Success depended more on personal care and experience than on anything else. Mr Thornton had had the great advantage of being associated for many years with Mr. Spencer Wells, and this must be taken into account in comparing his statistics with those of others. He (Mr. Tait) lost nineteen out of his first fifty cases, and he did not think he would have had such a mortality had he had the opportunity of seeing, and assisting at, the operations of so distinguished a master.

Mr. DORAN having examined after death forty-one cases of ovariotomy, found that the kidneys were normal in only seven, and in one of that number death, was due to tetanus, in another to pleurisy. Of the renal disease six were cases of dilatation of ureter and pelvis on one side. The rest exhibited various degrees of subacute and chronic Bright's disease. In many cases there were lesions of other viscera, mostly diagnosed before operation; but the renal disease was nearly always latent; and this fact should be borne in mind before pronouncing on the statistical results of operations by different methods; and until it became possible to ascertain the existence of such disease there must always be room for fallacy in the comparison of such statistics. Albuminuria alone would not contra-indicate operation, for it might be due to pressure, which the operation would relieve. Diminution in the quantity of urea might be due to diminished quantity of food: and sometimes in renal disease there was an excess of urea. Dr. Bantock had remarked upon the diminution of the sulphates as evidence of carbolic acid poisoning. Dr. Parkes has shown that thirty-one grains of sulphuric acid are eliminated by the kidneys in twenty-four hours. After a severe operation

the call on the kidneys must be very great, and if they be diseased great risk was added to the patient's chances of recovery.

Mr. SAVORY said that the only point on which there seemed to be agreement, was that as experience increased the mortality diminished. He asked if this did not point to the question being one of the man rather than the method; and did not such a reflection vitiate all conclusions derived from statistics of the first twenty cases compared with the second twenty, and so on?

Mr. SPENCER WELLS would meet Mr. Savory's argument by the experience of the same surgeon in a successive series of years. No doubt the mortality diminished with increasing experience, but after a time the mortality reaches a level below which it will not fall, until the introduction of a new method leads to further improvement in the results. It had so happened with him. At first the mortality gradually fell from 34 per cent. to 28, to 24, and so on, until it reached a level beyond which it did not fall, and the question came whether it was possible to reduce the mortality still lower. This caused him to adopt the antiseptic treatment, and at the beginning of 1878 he commenced to follow Listerian methods. To be sure, the cases in which he applied it were all in private patients, but he had when in hospital practice found no difference in the results of the two classes of patients; nor was it due to the intra-peritoneal method, for before he used antiseptics he had been less successful with this than with the extra-peritoneal. Since adopting Listerism he had had 131 cases, with 13 deaths—a mortality of 10 per cent.; which was precisely the same mortality he had in the last two years of his hospital practice—viz., 7 deaths in 71 cases. These figures alone might be quoted to show there was no advantage gained by Listerism. But there were very real advantages. He was surprised to hear Dr. Bantock, Mr. Tait, and Mr. Thornton find such rises in temperature after Listerian ovariotomies, for he never saw them; it was rare to see the temperature over 100°. The method did not involve trouble—it greatly saved it. Formerly a case had to be closely and personally supervised; but all this trouble and anxiety were saved in treating a case antiseptically. Again, in forty-nine cases out of fifty so treated the wounds heal by first intention; and it was quite a matter of surprise to him to find, as he did lately in a case, any pus in the wound. In that case its appearance was explained by development of boils in other parts of the body. In reply to Mr. Tait, Mr. Wells added that when the pedicle was short he used the ligature in preference to the clamp.

Mr. HOLMES said that after all they had heard that evening from the advocates and opponents of Listerism he was ready to withdraw his former observation that the grounds urged in favour of the method were based only on "impressions"; and he would like to put it to the Society, whether, after these definite details, there were such characteristic differences between cases treated with and without the method, as would be the case were its theory true. Recalling the claims urged for the theory when it was first promulgated, he would ask whether it was at that time thought that 130 cases treated under the theory would show the same result as those treated otherwise? Whether, if one was not told, one would perceive any real essential difference between the cases which were treated on the basis of the germ theory and those without this basis? He was not a partisan of any one method. He had sat at the feet of Lister, and had tried to master the details of his method, which in the early days were far simpler than at present, for they had been so modified that he confessed he did not understand them, and he was sure Mr. Thornton did not understand them, since he attributes his fatal cases to a lack of mastery of these details. Did Mr. Lister himself even understand them? Was the theory itself understandable? When a case is lost, the failure is put down to failure to understand the theory; when a case is

saved, then the theory is triumphant. If this were all it came to, and after the method had been so long in use there was still a quarrel as to its advantage in 1 per cent. of the cases, it might fairly be said that the theory was "not proven."

Dr. BANTOCK, in reply, said that the local anæsthesia produced by carbolic acid was well known to him. He quoted from a paper written by Mr. Thornton to show that that gentleman attributed two deaths from pleurisy to the chilling produced by the spray, and one from suppression of urine to the carbolic acid: and in another paper spoke of extreme congestion of the kidneys as due to carbolic acid. In his own practice he had treated thirty-six cases with true Listerian precautions, with eight deaths, one patient dying on the operating table. With a solution of carbolic acid, 1 in 50, he had treated forty-one cases with a mortality of three; one of these cases was *in extremis* when operated on; another died from acute nephritis, and a third from tetanus, on the eighth day, and apparently independently of the operation. In two of these cases he had used the ice-cap, and he found that in proportion as the strength of the solution was reduced to 1 in 60, 1 in 80, to 1 in 100, the results improved, the ice-cap never being required since he had used the weaker solution. He had had many cases in which there was disease of the kidneys—a most unfavourable condition, owing to the little or no power of elimination. He quoted recent statistics of an Italian surgeon, showing that in his practice ovariotomy with Listerism in 100 cases gave a mortality of 37 per cent., and in a second series of 100 cases without Listerism a mortality of 36 per cent. Mr. Bryant had recently published facts showing that pyrexia in surgical cases was considerably less than supposed, without undue antiseptic precautions being taken. Mr. Spencer Wells had stated in his book that he never used the ligature when the clamp could be used, and it was not therefore surprising that the ligature should compare unfavourably with the clamp. The merit of using a solution of carbolic acid of 1 per cent. strength lay in its not causing hyperpyrexia; he had not once to use the ice-cap in cases treated with this solution, and out of twenty-nine cases had lost eight, two deaths being from shock. The great point was strict attention to cleanliness, and in this respect the modern practice differed from that formerly in vogue. Mr. Heath was the first to put this principle into practice, and combined with free drainage, found that Listerism did not add to the measures, although it added to the risk of subsequent pyrexia. The dread of injuring the peritoneum had disappeared before Listerism was taught, for it was shown that fever decreased in proportion as effectual drainage was practised, and the causes of irritation of the peritoneum avoided. Patients still died even under the strictest Listerism. He would not follow Galezowski, who said that since he had used antiseptics (!)—viz., solution of carbolic acid of 1 in 1000—his operations on the eye were markedly successful; and, whilst according full measure of praise to Mr. Lister's teaching, he could not admit the truth of those exaggerated pretensions claimed for his method by his disciples with a zeal which outran discretion.—*Lancet*, Dec. 18, 1880.

Medical Jurisprudence and Toxicology.

The Law of Slander as Applicable to Physicians.

The importance of a clear understanding of this subject to the practising physician is so great that we feel justified in reproducing, from the *American Law Register* (August, 1880), the following paper on the subject from the pen of Mr. W. H. WHITAKER, of Cincinnati:—

There is, perhaps, no class of professional men more subject to abuse, and, it is believed, more powerless to obtain redress, than physicians. About clergymen the law has thrown its protecting arm, and public opinion has been wont to overlook, if not to pardon, their short-comings. The clergyman is a sort of privileged person, whose character is tried before and whose conduct is regulated by ecclesiastical tribunals to which the courts of law have relegated it. Lawyers can take care of themselves.

For alleged professional misconduct, incapacity, or ignorance, for rumored unskilful treatment of diseases, physicians who choose may have recourse to legal proceedings. But to cowhide the editor or sue the newspaper for the circulation of a libel, may be said in either case to be social suicide. The physician must grin and bear it. But if he braves public opinion and asserts his rights, if he endeavours to obtain satisfaction at law, the chances are, to say the least, uncertain. It is doubtful, as the law now stands, what charges of misconduct in a physician in a *single* instance are actionable. One court (*Camp* v. *Martin*, 23 Conn. 86) has held that words spoken of a physician, charging him *merely* with ignorance or misconduct in the treatment of a particular case, were not actionable *per se*. The words were, "If Dr. C. had continued to treat her, she would have been in her grave before this time. His treatment of her was rascally."

Another court (*Secor* v. *Harris*, 18 Barb. 425) has adopted a contrary view in a similar case, where the words were: "Dr. S. killed my children. He gave them teaspoon doses of calomel: it killed them; they died right off, the same day." This last is no doubt a more aggravated case, but it is difficult to understand the grounds upon which the principle was distinguished in the two cases. The court said in the last instance that in the rendition of its judgment it was borne out by the authorities, while in the first case the court was equally confident, after having examined the authorities, that none could be found analogous to the case at bar, to justify an action for damages *per se*. Both, however, united on one case (*Sumner* v. *Utley*, 7 Conn. 257), as being in point, and it is amusing to observe what different constructions the two opposing tribunals gave to a case which must certainly have decided one way or the other. The Connecticut court said it thought that the case referred to, so far from varying the rule as they had given it, intended to sanction it, and quoted at length from C. J. HOSMER, as follows: "I readily admit that falsehood may be spoken of a physician's practice in a particular case, ascribing to him only such want of information and good management as is compatible with general knowledge and skill in his profession, and that when such a case arises, unless some special damage exists, his character will be considered as unhurt and no damages will be presumed. But, on the other hand, it is indisputable that a calumnious report in a particular case may imply gross ignorance and unskilfulness, and do him irreparable damage. A physician may mistake the symptoms of a patient, or may misjudge as to the nature of his disease and even as to the power of the medicine, and yet his error may be of that pardonable kind that will do him no essential prejudice, because it is rather a proof of human imperfection than of culpable ignorance or unskilfulness. On the contrary, a single act of his may evidence gross ignorance and such a deficiency of skill as will not fail to injure his reputation and deprive him of general confidence."

Now the New York court, on the other hand, said that the doctrine laid down in the cases of *Poe* v. *Mondford*, Cro. Eliz. 620, and *Foot* v. *Brown*, 8 Johns. 64, both of which were adopted as authorities by the Connecticut court, had been repudiated. In the former, defendant charged plaintiff with having killed a patient with physic, and it was held that the words were not actionable *per se*, and that the law only gave an action for words affecting a man's credit in his

profession, as charging him with ignorance or want of skill in general. In the latter the words were spoken of an attorney: "F. knows nothing about the suit, he will lead you on until he has undone you;" and it was held, on the authority of the former, that, no special damage being shown, the action would not lie. Rejecting these two cases as unauthoritative, the New York court also quoted from the case of *Sumner* v. *Utley*, *supra*, as follows: "As a general principle it can never be admitted that the practice of a physician in a particular case may be calumniated with impunity unless special damage is shown. By confining the slander to particulars, a man may thus be ruined in detail. A calumniator might follow the track of the plaintiff and begin by falsely ascribing to the physician the killing of three persons by mismanagement, and then the mistaking of an artery for a vein, and thus might proceed to misrepresent every single case of his practice until his reputation should be blasted beyond remedy. Instead of murdering character by one stroke, the victim would be successively cut in pieces, and the only difference would be in the manner of effecting the same result."

It is good to beat your adversary with his own weapons, and while the case of *Sumner* v. *Utley*, decided in effect that slanderous words spoken of a physician were actionable *per se*, the court in *Camp* v. *Martin*, *supra*, notwithstanding, drew a favourable conclusion for holding that in its case slanderous words were *not* actionable *per se*. It is true that the case of *Sumner* v. *Utley* was somewhat stronger than either of the other two, and may have furnished grounds for the distinction that was drawn between gross ignorance in a single instance, and gross ignorance generally in the treatment of diseases, but there seems to us to be little, if any, difference between a case where the words were that a doctor killed his patient, and one where they alleged that if he had continued to treat the patient she would have been dead by this time, so far as the presumption of incapacity is concerned. In *Sumner* v. *Utley* the words imputed gross ignorance generally and particularly. The defendant said of the physician: "He has killed three and ought to be hung—damn him. They all died through his mismanagement. I have understood that he left an after-birth, and the man that would do that ought to be hung;" and on another occasion, addressing himself to Mrs. H., who had employed plaintiff as her physician, said: "He was the means of her sickness by cutting an artery in her head—damn him; you ought not to pay him a cent; if Mr. H. had taken him up for it, it would have cost him $400. It ought to be put in the newspapers." The rule may be said to be as Chief Justice Hosmer put it, though it does not appear to be very clear: "This then is the correct principle, that the misrepresentation of a physician's practice in a particular case, if it does not warrant the presumption of damage is not actionable, unless special damages are averred and proved; but if from the nature of the calumny damages are inferable, the words are actionable."

The question still remains, when do the misrepresentations of a physician's practice in a particular case warrant the presumption of damage? It is allowed that slanderous words alleging gross ignorance generally, or such ignorance or thorough incapacity as unfits him for the proper exercise of his profession, are actionable *per se*. To say of a physician that "He is a quack" (*Pickford* v. *Gutch*, Dorchester Assizes, 1787); or "He is an empiric and a mountebank" (Vin. Abr. Act. for Words, S. a. 12); or "He is a quack; if he shows you a diploma it is a forgery" (*Moises* v. *Thornton*, 8 Term Rep. 303); or "He is no doctor; he bought his diploma for $50" (*Bergold* v. *Puchta*, 2 Thomp. & C. (N. Y.) 532); or "He is a drunken fool and an ass, and never was a scholar" (*Cawdry* v. *Tetley*, Godb. 441); or "He has killed six children in one year" (*Carroll* v. *White*, 33 Barb. 615); or "It is a world of blood that he has to answer for in this town through his ignorance. He was the death of J. P. He

killed his patient with physic" (*Tutty* v. *Alewin*, 11 Mod. 221); or "I wonder you had him to attend you. Do you know him? He is not an apothecary; he has not passed any examination. He is a bad character; none of the medical men here will meet him. Several have died that he has attended to, and there have been inquests held upon them" (*Southee* v. *Denny*, 1 Ex. 196). In all these cases it has been held that damages are inferable without proof; but to say of a physician, "He is so steady drunk that he cannot get business any more" (1 Ohio, 83, n.); or "He is a two-penny bleeder" (*Foster* v. *Small*, 3 Whart. 138); or to charge an allopathic physician with having met homœopathists in consultation, and that in the opinion of the profession it was improper to do so and against etiquette, and, further, that in the opinion of the profession it was disgraceful to meet a homœopathic in consultation (*Clay* v. *Roberts*, 8 L. T. N. S. 397); or to charge him with adultery not necessarily touching him in his profession without showing that it was connected with his profession (*Ayre* v. *Craven*, 2 Ad. & E. 2), have been held not actionable *per se*.

While the authorities are generally agreed as to charges of gross ignorance or incapacity in the exercise of the duties of the physician, it is not easy to determine what words are actionable in themselves in special instances. In analogous, and even in precisely similar, cases, the courts are divided. Where the words were: "He killed my child; it was the saline injection that did it" (*Edsall* v. *Russell*, 4 M. & G. 1090); or "He has killed my child by giving it too much calomel" (*Johnson* v. *Robertson*, 8 Porter, 486), they have been held actionable *per se*. And, on the contrary, the words, "He has killed his patient with physic" (*Poe* v. *Mondford*, *supra*), or "In my opinion, the bitters A fixed for B were the cause of his death" (*Jones* v. *Diver*, 22 Ind. 184), or "He gave my child too much mercury, or he made the medicines wrong through jealousy, because I would not allow him to use his own judgment" (*Edsall* v. *Russell*, *supra*), have been held not actionable in themselves.

In the examination of these cases, it will be found that where the physician is charged with killing his patient, the words have been held actionable on account of the imputation of crime which they import, and the only case in which such language has been held not actionable, is that of *Poe* v. *Mondford*, of an early origin. This case was rejected by the court in *Secor* v. *Harris*, on the ground that it was decided at a time when the doctrine of *mitior sensus* prevailed. And as for the case of *Jones* v. *Diver*, the court held that the words were not actionable, because they did not import a charge of murder; that if the defendant had said that "the bitters Dr. D. gave John Smith caused his death; there was enough poison in them to kill ten men," he would have been held guilty of the charge, and the words would have then been actionable.

How such words necessarily import the crime of murder or manslaughter, in the absence of any expression of intention, is not quite clear. This was not the ground of the decision in a case of a non-professional, charged with having destroyed the life of a patient by mistaken, but well-meant, efforts to save his life (*March* v. *Davison*, 9 Paige (N. Y.), 580). But even if the words do not import the charge of crime or of gross incapacity generally, there seems to be reason for holding that they should be actionable. It is true, as was said in a former case, that a physician might make a mistake in his treatment of a disease, because it was rather a proof of human imperfection than of culpable ignorance, but the consequences are often as fatal to him as though the charge was a general one. His mistake might be of "that pardonable kind" which would do him no injury in his profession, but the public might not pardon it. And what if he is not guilty of the charge? What if he has done his duty towards his patient, and has adopted every means in his power, and such as were recognized in the profession

as suitable for the case, to restore him to health? The consequences, so far as the public are concerned, are the same, with the additional mental suffering which every man must undergo whose conduct and whose actions are grossly misrepresented before the community at large. True, the law does not deny him his remedy, if he chooses to take it. Perhaps it would be more fatal to resort to legal proceedings in any case. If he does, he is compelled to show special damages, for none will be inferred. This alone would cause many to hesitate before bringing an action. The difficulty attendant upon proving damages, the length of time intervening between the publication and the consequences of a slander, would deter many from the prosecution of the slander.

As the cases now stand, you may bring almost any charge of misconduct against a physician in a particular case, without subjecting yourself to an action for damages *per se*, provided it does not come within the category of a statutory crime, or impute to him general incapacity.

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On the Elimination of Lead by Iodide of Potassium.

At the instance of Prof. Vulpian, M. POUCHET has examined quantitatively the urine of patients suffering from saturnism, in order to estimate the effect of the administration of the iodide of potassium on the elimination of lead (*Archives de Physiologie Normale et Pathologique*, 1880). The methods were electrolytic. The quantities of urine examined always measured from five to ten pints, quantities sufficiently large to permit the detection of even the smallest traces of lead. During the period of aggravated symptoms, the urine contained an average of one milligramme of metallic lead to the litre of urine examined. Under the influence of iodide of potassium in doses of from four to six grammes daily, the elimination of lead increased quickly, but again decreased at the end of from six to ten days, when it became less marked than before the treatment was instituted. During the first days of treatment there occurred a rapid desaturation of the system, which was more or less decided according to the intensity of the morbid phenomena. Thus, in the case of a patient who was gravely affected, the quantity of lead passed by the urine, immediately after the administration of the iodide, rose to five milligrammes per litre. After the continuous administration of the salt for more than two weeks, the elimination of lead ceased almost altogether, so that in fifteen litres of urine only a trace of lead was discernible. But when, after withdrawing the remedy, the patient was allowed to rest some days, prior to the readministration of the iodide, small quantities of lead were again eliminated with the urine. Hence arises the therapeutic indication of employing the iodides for a long time, instituting, however, intervals of repose, during which the remedy is not to be administered. M. Pouchet also analyzed the urine of a patient treated exclusively with the bromide of potassium without detecting any increase of the lead eliminated. From this, he deduces the inefficiency of bromide in the treatment of lead-poisoning.—*London Med. Record*, Nov. 15, 1880.

MEDICAL NEWS.

Food Adulterations.

Some recent and valuable researches in regard to the intentional and accidental impurities in our various articles of diet, become especially interesting when we remember that a healthy adult male takes into his stomach during every year, on the average, about four hundred pounds of meat, five hundred pounds of bread, three hundred pounds of potatoes and other vegetables, ninety pounds of butter and fats, and one hundred and fifty gallons of tea, coffee, and water; because obviously in this large quantity of nutriment, impurities or adulterations to the extent of a single grain to the pound might eventuate in the introduction of an absolutely large amount of poisonous material into the human organism.

Foremost among these investigations are to be ranked those of Dr. Charles Smart, U. S. A., undertaken under the direction of the National Board of Health, and reported in the Supplement No. 11 of its valuable *Bulletin*. From a purely sanitary point of view, Dr. Smart's experiments are quite reassuring, since they demonstrate that with such exceptions as the use of alum in bread and baking powders, of sulphate of lime in the sophistication of creamor tartar, of water in the dilution of milk, and of the injurious colouring matters entering into certain kinds of confectionery, prevalent adulterations affect the pocket of the consumer rather than his health, and cannot therefore be characterized as deleterious, but only as fraudulent. Dr. Smart's conclusions are based upon the examination of 713 samples, of which 304 were obtained from sources (such as the proprietors of first class stores, who knew their goods were to be tested, from the Commissary-General of the Army, etc.) where their purity was probable, and 409 were specimens the origin of which might be considered suspicious. Of the former of these two groups about 8 per cent. were impure, whilst of the latter nearly 45 per cent. were so far sophisticated, that under a law similar to that enforced in Great Britain, for the punishment of fraudulent adulteration, the dealers from whom they were derived might have been prosecuted with a fair prospect of success. As pointed out, these percentages give us no exact idea of the prevalence of food adulteration, since of certain articles, such as lard and corn meal, which were found to be genuine, but few specimens were tested, whilst had the examinations of classes of articles such as the ground spices, which are seldom unadulterated, been more numerous, the proportion of impure articles of food in our markets would be represented as much greater.

In illustration of the details of these useful researches, it may be mentioned that 109 specimens of imported teas were examined, 90 of these being presumably pure and 19 from suspicious sources. In no case was any leaf met with which was not derived from the tea plant, and of the 90 samples in the first group all were approved, although 5 of the 19 from suspected origins were found to be so deteriorated that an analyst would be warranted in reporting them as fraudulently dealt with. The mixture of glucose with brown sugar appears to be not infrequent, as out of 38 samples purchased for examination, nine were adulterated with glucose, which, although not injurious, has an economic value inferior to that of cane sugar. As our author suggests, glucose properly prepared from starch, and sold under its own name, at the low rate for which it could be furnished, would be a great blessing to the poor, who now use large quantities of it, in the sophisticated cane sugar, for which they pay an unreasonable price. Creamor tartar, which is important in this connection, on account of its extended use in culinary processes, was found to be largely adulterated, only 6 out of 18 specimens examined being of satisfactory purity. Eleven of these samples contained sulphate of lime in quantities varying from 17 to 90 per cent., and two mixtures consisted of sulphate of lime and phosphate of lime, alum, and starch, without a trace of the tartaric acid salt. The results in regard to spices of various kinds were lamentably unfavourable; for example only 1 out of 26 samples of ground cinnamon was found to be pure, the adulterations in the remainder being powdered corn, wheat, beans, allspice, almond-shells, and turmeric; two out of 18 specimens of ground cayenne pepper, were met with of satisfactory purity, the only gratifying point respecting the 16 fraudulent mixtures, being that they contained no red lead, reported by Dr. Hassall some years ago, as occurring in nearly half the English red pepper. Mustard, which is even more important as a medicinal agent, was almost equally unreliable, only 6 out of 17 samples being honest in their character, the fraudulent admixtures being chiefly wheat flour, or starch, and turmeric, although corn starch, rice, cayenne pepper, and sulphate of lime were also used. Almost the sole really poisonous adulteration detected was that observed in the yellow coloured confectionery, which was found to be tinted in 3 out of 5 instances with pigment containing lead. In one of the remaining samples the yellow material was composed of antimony, and in the other of turmeric. These results confirm the more extended series of observations made by H. B. Hill of Harvard College, who reports that 19 out of 21 yellow, and 11 out of 12 orange candies, contained lead. Dr. Smart found that 13 specimens of red confectionery owed their tint to cochineal, and were therefore unobjectionable on the score of their colouring material.

Dr. Smart concludes, from his investigations, that food adulteration is now practised in this country to as great or even a greater extent than it

was in England when an effort was first made, some twenty-five years ago, to suppress this fraudulent and dangerous practice by stringent legal measures. The corn meal and lard we obtain, as well as our wheat flour, are pure, although bakers introduce alum into our bread. Sugars are less commonly sanded than formerly, but adulteration with glucose is becoming increasingly frequent. Thanks to our American fashion of grinding coffee at home, this important beverage may generally be secured pure, but our spices are very generally sophisticated, and some kinds of confectionery, especially those of a yellow or orange colour, are so apt to be poisonous that they should be studiously avoided.

The dangers to health arising from unsound and infected meat, such as of trichiniasis from diseased pork, and of phthisis from tuberculous beef and milk, etc., call for prompt and earnest consideration, which, however, must be reserved for some future occasion.

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Listerism in Paris.—One of the most thorough disciples of Listerism in Paris—where the antiseptic method, slow to take root, is now the subject of an ardent and convinced propaganda—is M. Richelot, Professor *agrégé* of the Faculty of Paris. M. Richelot took the place of M. Richet at the Hôtel-Dieu, during a three months' holiday of the latter. The remarkable successes which he achieved were the subject of much observation, and produced a great impression on those who were able to contrast his results with the surrounding state of things. M. Richelot has published a *Note sur les resultats du pansement de Lister*, which is very interesting and satisfactory.—*British Med. Journal*, Nov. 27, 1880.

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Deaths from Chloroform.—A writer in a recent number of the *Lancet* (November 6, 1880) states that during the past twelve months no less than twenty-five deaths from chloroform have been reported, and in comment says, "It is not for me to say that a grave responsibility rests on the surgeon who employs chloroform when a safer anæsthetic is available, but I think it cannot be long before the voice of the profession (if not of the public, as in America) demands some explanation for the use of an agent whose victims are numbered by hundreds."

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Sheep's Tallow for Carbolic Acid Ointments.—Herr Nuelck, a Berlin apothecary, recommends, in the *Berliner Klinische Wochenschrift*, No. 30, the substitution of sheep's tallow for the ordinarily used oils as a menstruum for diluting and applying carbolic acid. Sheep's tallow has a much higher melting point than lard or oils; and thus remains as a soft, bland, and consistent salve, when the heat of the skin would melt the usual ointments, and convert them into flowing and irritating fluids. He gives formulæ for preparations and dressings made with carbolic sheep's tallow.—*British Med. Journal*, Dec. 18, 1880.

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The Gross Surgical Prize.—The Philadelphia Academy of Surgery offers through its President, Dr. S. D. Gross, a Prize of Five Hundred Dollars for the best Essay on the Surgical Pathology, and Treatment of Tumours or Morbid Growths of the Testis, Scrotum, and Spermatic Cord, to be open exclusively to American Surgeons.

1. The Essay must be founded solely upon original investigations, be illustrated by suitable drawings, microscopical, and other, and be written in scholarly English.

2. The Essay must comprise an amount of matter equal to 250 pages octavo.

3. It shall be the property of the Academy, which shall, at its option, permit the author to publish it at his own risk or expense.

4. Each Essay must be accompanied by a motto, and by a sealed letter containing the author's name.

5. The award will be made at the meeting of the Academy in January, 1884, by a committee of five of its Fellows, consisting of D. Hayes Agnew, M.D., Wm. Hunt, M.D., R. J. Levis, M.D., John H. Packard, M.D., and J. Ewing Mears, M.D., Secretary, 1429 Walnut St., Phila.

Essays should be forwarded to the Secretary of the committee on or before October 15, 1883.

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University of Pennsylvania.—Dr. William Pepper, Professor of Clinical Medicine, was, on the 12th ult., elected Provost of the University. The duties of the Provost were at the same time modified, and the supervisory and disciplinary functions of the Vice Provost and Deans of the various faculties were enlarged. We understand that the Trustees are desirous of having the University's needs actively brought to the attention of the public; and it is believed that Dr. Pepper's well-known energy and executive ability will largely conduce to this end.

Mr. Henry C. Gibson, of this city, with great liberality has offered the University Hospital to erect at his own expense a new wing for incurables, with accommodation for one hundred beds. The plans are now in preparation, and a permanent endowment fund for the support of the ward is being raised.

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Bequest to Yale Medical College.—The late Dr. David P. Smith, Professor of Medicine in the Medical School of Yale, bequeathed his medical library, instruments, and two-fifths of his estate to Yale Medical College. The pecuniary bequest is for the endowment of the chair of Theory and Practice of Medicine.

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Midwifery in Cincinnati.—It is stated that seventy per cent. of the labour cases in Cincinnati are delivered by midwives, who are for the most part ignorant and uneducated.

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The Library of the College of Physicians of Philadelphia.—The annual report states that this library now contains 23,288 volumes, an increase of 1259 in the past year. We regret to learn that ill health has compelled Dr. Robert Bridges to resign the office of Librarian, which he has held for many years.

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Library of the New York Academy of Medicine.—At the annual meeting of the Academy, in January, it was reported that the library contains over 17,000 volumes, and is in receipt of 122 current American and European medical journals. Mr. John Jacob Astor has recently given $500 for the improvement of the journal and circulating department of the library.

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New York State Medical Society.—This Society will hold its annual meeting at Albany on the first day of February.

International Medical Congress, London, 1881.—The following subjects, in addition to those announced in our last number, have been proposed for discussion.

Section VIII. (*Mental Diseases*).—Anatomy: 1. Modes of Preparation of Nervous Tissues; 2. Morbid Appearances due to Modes of Preparation; 3. Minute Structure of Special Parts of Brain. Physiology: 1. Relation of Cerebral Localization to Mental Symptoms, as Hallucinations; 2. Hypnotism. Pathology: 1. Of Idiocy, Morphological and Histological Changes; 2. Relations of Insanity to Gout, Renal Disease, Exophthalmic Goître, and to Coarse Brain Disease. Clinical: 1. "Folie à Double Forme"; 2. Influence of Intercurrent Diseases on Insanity; 3. Insanity due to Toxic Agents. Therapeutical: 1. Use of Baths, of Narcotics, of Chloral Hydrate, of Opium, and of Alcohol; 2. New and Unusual Remedies. Asylum Administration: 1. Cottage and Village Treatment; 2. New Legal Codes—Austrian, Italian, English Projects. Civil Relations of the Insane: 1. Marriage, Wills; 2. Insanity and Aphasia. Criminal Relations of the Insane: Special Asylums for Insane Criminals.

Section XIV. (*Military Surgery and Medicine*).—1. By what arrangement can the practical difficulties in the way of employing antiseptic surgery (Listerism) in the treatment of wounds inflicted in the field in time of war be most readily overcome? [The discussion to include (*a*) the system on which the treatment can be most efficiently carried out; and (*b*) the fittest material means to be employed in it, under the circumstances in which armies are placed while on actual service.] 2. To what extent, and in what special directions, has conservative surgery advanced in field practice, as shown by statistical results of the treatment adopted for gunshot wounds during the wars of the last ten years? and what indications have been afforded, if any, by the experience gained during this period for making further advances in the conservative treatment of such injuries? 3. What are the most reliable, and at the same time practicable, means of immobilizing the parts involved in gunshot fractures of the Spine, Pelvis, and Femur in field practice? 4. On improvements in field hospital and transport equipment, for use with armies moving in uncivilized or partially civilized countries, suggested by the experience gained during the recent military operations by British troops in South Africa. 5. On the prevalence and prevention of Typhoid Fever among young soldiers in India.

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International Exhibition of Hygiene.—It is proposed to hold during the International Medical Congress at London, an exhibition at South Kensington of sanitary and medical apparatus, under the auspices of the Executive Committee of the Parkes Museum of Hygiene. It is intended that the scope of the exhibition shall be broad, and all branches of sanitation will be included. In addition to sanitary apparatus there will be classes devoted to the exhibition of: 1, hospital construction and arrangement; 2, surgical instruments and apparatus; 3, appliances of the ward and sick-room; 4, drugs, disinfectants, and medical dietetic articles; 5, electrical and optical apparatus; 6, microscopes and other apparatus used in the investigation and relief of disease; 7, appliances used for the treatment of sick and wounded in time of war.

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Allgemeine Wiener Medizinische Zeitung.—At the close of December, Dr. B. Kraus celebrated the "twenty-five years jubilee" of this able journal, of which he has been the editor since its foundation. With the offer of our congratulations on the occasion we couple the hope that many years of prosperity and usefulness may await the journal and its learned editor.

Professor Milne-Edwards.—The *Revue Scientifique* publishes the following notice: "Professor MILNE-EDWARDS, having recently completed his 'Leçons sur la Physiologie et l'Anatomie Comparée de l'Homme et des Animaux,' a committee has been formed to present a public testimonial of gratitude to the acknowledged master who, after more than half a century of personal research, has summed up in this work the past and present of the zoological sciences. The intention of the committee is to strike a medal bearing the effigy of M. Milne-Edwards, and, convinced that in every country there will be found men happy to associate themselves with this manifestation, it appeals with this object to foreign as well as to French *savants*. The committee is composed of M. Dumas, perpetual secretary of the Academy of Sciences; the members of the Zoological Section of the Academy; all the professors of zoology, anatomy, and physiology of the great establishments of public instruction in Paris; and M. Masson, the publisher of M. Milne-Edwards' works. Subscriptions and lists of subscribers may be forwarded to M. Maindron, at the Secretary's Office of the Institute, Paris." —*Med. Times and Gazette*, Dec. 4, 1880.

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Literary Notes.

Messrs. J. B. Lippincott & Co. have just published Dr. H. C. Wood's Smithsonian Contribution on the Study of Fever.

Mr. H. K. Lewis has recently issued "Elements of Practical Medicine" by Dr. Alfred H. Carter, Physician to the Queen's Hospital, Birmingham, and a "German-English Dictionary of the Medical Sciences" by Dr. Fancourt Barnes.

Mr. David Bogue, of London, announces a translation of Fournier's lectures on "Syphilis and Marriage."

Among new journals we notice *Archives d'Ophthalmologie*, edited by Prof. Panas and Drs. Landolt and Panas, which promises to become the leading Paris journal on its specialty.

The *International Journal of Medicine and Surgery* is a weekly published in New York, and devoted to translations of abstracts of articles appearing in Continental journals.

L'Encephale is a forthcoming serial on mental and nervous diseases, to be edited by Prof. Ball and Dr. Luys.

The Annals of the "Anatomical and Surgical Society," of Brooklyn, has met with such deserved success that its editors feel themselves justified in increasing its size and widening its scope. It will be hereafter known as the *Annals of Anatomy and Surgery*. The journal has been conspicuous for the excellence of its original matter, the ability of its editorial management, and the attractiveness of its typographical appearance, and in its enlarged form we have no doubt its field of usefulness will be increased.

The English *Publishers' Catalogue* contains an analytical table of the books published during the past year, from which it appears that during 1880 medical and surgical literature has been enriched by the addition of 202 volumes (54 being new editions), as compared with 189 (53 new editions) in 1879. It is interesting to observe that of the fourteen sections into which the subjects of the books are divided, in point of number of works issued, only three, viz., those of "Law, Jurisprudence, etc.," "Poetry and the Drama," and "Belles Lettres, Essays, etc.," fall below that of "Medicine and Surgery."

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To Readers and Correspondents.—The editor will be happy to receive early intelligence of local events of general medical interest, or which it is desirable to bring to the notice of the profession. Local papers containing reports or news items should be marked.

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